


1969

Bulletin of the University of Nebraska: Annual Catalog of the College of Medicine, 1969-1970

University of Nebraska College of Medicine

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Bulletin of the University of Nebraska

Issued May 15, 1969

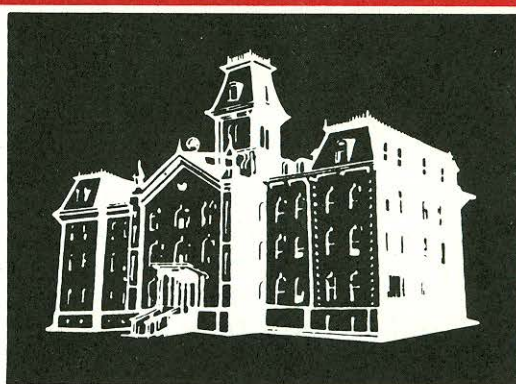
COLLEGE OF MEDICINE

Omaha

1969-1970

Dup

101



THE UNIVERSITY
OF NEBRASKA

CENTENNIAL



1869-1969

THE HIPPOCRATIC OATH FORMULATED AT GENEVA

Now being admitted to the profession of medicine I solemnly pledge to consecrate my life to the service of humanity. I will give respect and gratitude to my deserving teachers. I will practice medicine with conscience and dignity. The health and life of my patient will be my first consideration. I will hold in confidence all that my patient confides in me. I will maintain the honor and the noble traditions of the medical profession. My colleagues will be as my brothers. I will not permit considerations of race, religion, nationality, party politics or social standing to intervene between my duty and my patient. I will maintain the utmost respect for human life from the time of its conception. Even under threat I will not use my knowledge contrary to the laws of humanity. These promises I make freely and upon my honor.

*Adopted by the Second General Assembly of the World Medical Association held in Geneva, Switzerland, September 8 to 11, 1948

college of medicine
1969-1970
course offerings

SERIES LXXIV

MAY 15, 1969

NUMBER 18

Issued once in September, November, and July; twice in January and August; 3 times in February, April, May; and 4 times in March by the University of Nebraska Office of Publications, Nebraska Hall, 901 N. 17th Street, Lincoln, Nebraska 68508. Second class postage paid at Lincoln, Nebraska.

COLLEGE OF MEDICINE CALENDAR

ACADEMIC YEAR 1969-1970

Quarters

June 9 through August 31, 1969.....	Summer
Sept. 2 through Nov. 23, 1969.....	Fall
Nov. 24 through Mar. 1, 1970.....	Winter
Mar. 2 through May 28, 1970.....	Spring

Recesses and Holidays

July 4, 1969 (Friday).....	Independence Day
Sept. 1, 1969 (Monday).....	Labor Day
Nov. 27, 1969 (Thursday).....	Thanksgiving
Dec. 20, noon, through Jan. 4, 1970.....	Winter Recess
March 28, noon, through April 5, 1970.....	Spring Recess
May 29, 1970 (Friday).....	Memorial Day

Special Events

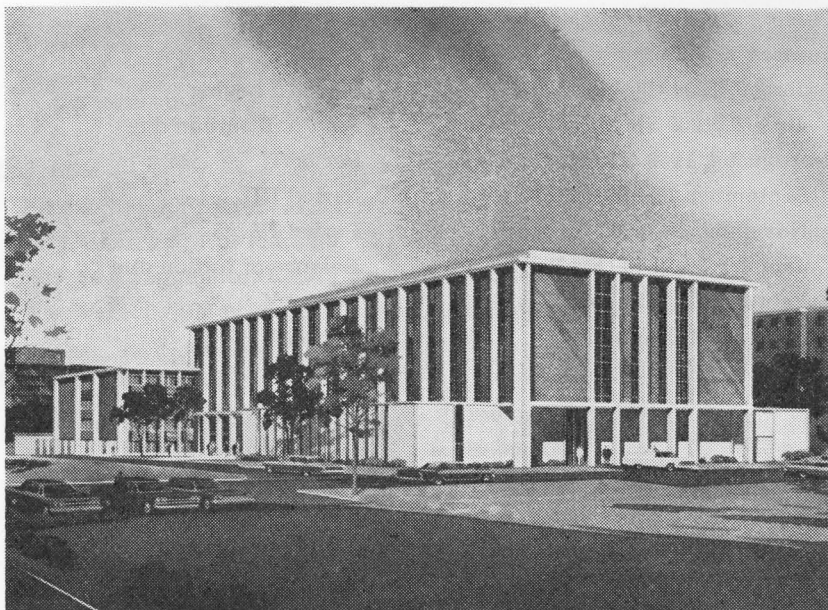
Sept. 10, 1969.....	Field Day (Juniors)
Oct. 19, 1969.....	Family Day
April 18, 1970.....	Pre-Med Day
April 21 and 22, 1970.....	National Board Examination, Part II
June 23 and 24, 1970.....	National Board Examination, Part I
June 7, 1970.....	Commencement
Oct. 7 and 8, 1969.....	
Jan. 13 and 14, 1970.....	State of Nebraska Basic Science Examination
May 5 and 6, 1970.....	

Freshmen and Sophomores

August 28, 1969 (Thursday).....	Freshman orientation, a.m.
August 28, 1969 (Thursday).....	Freshman physical examination, p.m.
August 28, 1969 (Thursday).....	Sophomore registration, p.m. first half tuition due
August 29, 1969 (Friday).....	Freshman registration, a.m. first half of tuition due
September 2, 1969 (Tuesday).....	First day of classes
January 30, 1970 (Friday).....	Balance of tuition due

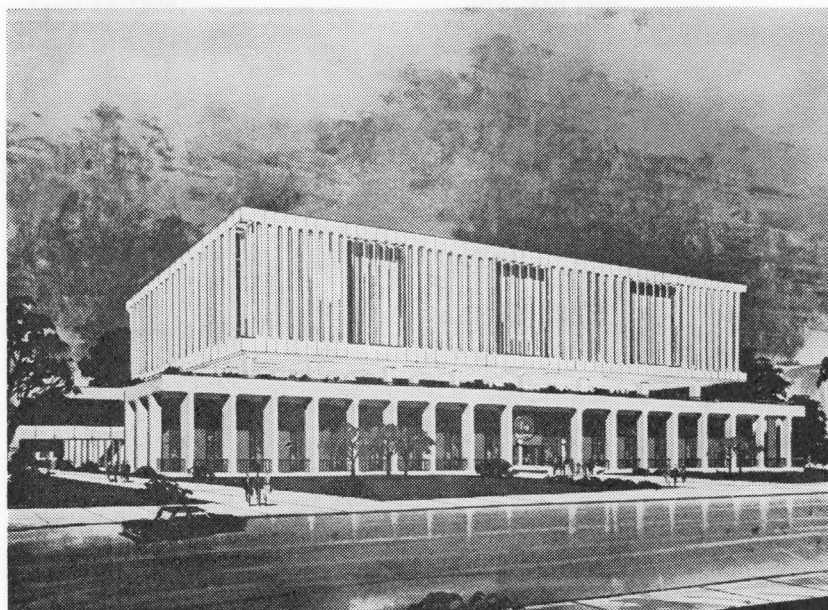
Juniors and Seniors

June 9, 1969 (Monday)	Period I begins
June 9, 1969 (Monday)	First half tuition due
August 4, 1969 (Monday)	Period II
September 29, 1969 (Monday)	Period III
November 24, 1969 (Monday)	Period IV
January 30, 1970 (Friday)	Balance of tuition due
February 2, 1970 (Monday)	Period V
April 6, 1970 (Monday)	Period VI



Architect's drawing of the new addition to University Hospital. It adds 200 teaching beds to the college. Older sections of the hospital will be remodeled.

Basic Science Building and Library of Medicine



ADMINISTRATION

The Board of Regents

	<i>Term Expires</i>
Richard E. Adkins, Osmond.....	January 1971
B. N. Greenberg, M.D., York.....	January 1971
Richard L. Herman, Omaha.....	January 1973
Edward Schwartzkopf, Lincoln.....	January 1973
J. G. Elliott, Scottsbluff.....	January 1975
Robert L. Raun, Minden.....	January 1975
G. Robert Ross, Lincoln, Corporation Secretary	

The University

Merk Hobson, Ph.D., Acting Chancellor of the University,* Vice Chancellor for Academic Affairs.
 Joseph Soshnik, Ph.D., President of the University of Nebraska, Lincoln Campuses and Outstate Activities.
 G. Robert Ross, Ph.D., Vice Chancellor for Student Programs, Dean of Student Affairs.
 C. Peter Magrath, Ph.D., Dean of Faculties.
 Cecil Legriell Wittson, M.D., President of the University Medical Center.
 Robert B. Kugel, M.D., Dean of the College of Medicine.
 Dean Craig Affleck, Ph.D., Associate Dean of the College of Medicine.
 Rena E. Boyle, Ph.D., Dean, School of Nursing.
 Mary Jo Henn, M.D., Assistant Dean of the College of Medicine.
 Warren H. Pearse, M.D., Assistant Dean of the College of Medicine.
 Cecil R. Boughn, B.A., Administrative Assistant to the President of the University Medical Center.
 Harry S. Allen, M.S., Director of Institutional Research and Planning.
 Gene A. Budig, Ed.D., Administrative Assistant to the Chancellor.
 Lee W. Chatfield, M.A., Associate Dean of Student Affairs.
 Carl A. Donaldson, M.S., Director of Business Services (All-University).
 George S. Round, B.S., Special Assistant to the Chancellor, Director of Information.
 Carl R. Yost, M.B.A., Comptroller of the University.

Emeriti Faculty

Clarence F. Bantin, B.S., M.D., Associate in Pediatrics, Emeritus.
 James Winfred Benjamin, B.A., M.A., Ph.D., Professor of Anatomy, Emeritus.
 Rolland Russell Best, B.S., M.D., Professor of Surgery, Emeritus.
 John Francis Bresnahan, B.S., M.S., M.D., Instructor in Internal Medicine, Emeritus.
 Herbert Heywood Davis, A.B., M.D., Professor of Surgery, Emeritus.
 Herbert Leroy Davis, A.B., Ph.D., Associate Research Professor of Surgery and Biochemistry, Emeritus.
 Frank Lowell Dunn, B.S., M.D., Professor of Internal Medicine, Emeritus.
 Horace K. Giffen, B.A., M.D., Assistant Professor of Pathology, Emeritus.
 Walter Mark Gysin, M.D., Associate Professor of Neurology and Psychiatry, Emeritus.
 Arthur Leitcher Irons, D.D.S., Associate in Surgery, Emeritus.
 John Hewitt Judd, B.S., M.D., Professor of Ophthalmology, Emeritus.
 Esley Joseph Kirk, A.B., M.D., Associate Professor of Internal Medicine, Emeritus.
 John Stephens Latta, A.B., Ph.D., Professor of Anatomy, Emeritus.
 Joseph Daniel McCarthy, M.D., Professor of Internal Medicine, Emeritus.

*Chancellor Clifford M. Hardin on leave as Secretary of Agriculture in the Cabinet of the President of the United States.

Charles Franklin Moon, B.S., M.D., Professor of Obstetrics and Gynecology, Emeritus.
Sergius Morgulis, A.B., M.A., Ph.D., Professor of Biochemistry, Emeritus.
Charles Austin Owens, B.S., M.D., Associate Professor of Urology, Emeritus.
William Lete Shearer, A.B., D.D.S., M.D., Professor of Surgery, Emeritus.
Chester Hill Waters, Sr., B.S., M.D., Professor of Surgery, Emeritus.

Senior Consultants

Leland C. Albertson, A.B., M.D., Instructor in Internal Medicine, Senior Consultant.
Allen Byford Anderson, M.D., Clinical Associate in General Practice, Senior Consultant.
Arthur Wesley Anderson, Sr., B.A., M.D., Clinical Associate in General Practice, Senior Consultant.
Harley Eric Anderson, B.S., M.D., Senior Consultant in Obstetrics and Gynecology.
Walter Benthack, B.A., M.D., Clinical Associate in General Practice, Senior Consultant.
Gordon Newell Best, B.S., M.D., Assistant Professor of Internal Medicine, Senior Consultant.
James Dewey Bisgard, A.B., M.D., Professor of Surgery, Senior Consultant.
Waldron Alvin Cassidy, A.B., M.D., Professor of Otorhinolaryngology and Consultant in Bronchoscopy, Senior Consultant.
John Calvin Davis, Jr., A.B., M.D., Professor of Otorhinolaryngology, Senior Consultant.
Max Fleishman, M.D., Assistant Professor of Internal Medicine, Senior Consultant.
W. Max Gentry, A.B., M.D., Clinical Associate in General Practice, Senior Consultant.
Millard F. Gunderson, B.S., M.S., Ph.D., Professor of Microbiology, Senior Consultant.
George Alfred Haslam, A.B., B.S., M.D., Clinical Associate in General Practice, Senior Consultant.
Harlan S. Heim, B.A., M.D., Clinical Associate in General Practice, Senior Consultant.
Dwight Otis Hughes, B.S., M.D., Clinical Associate in General Practice, Senior Consultant.
Wayne McKinley Hull, B.A., B.S., M.S., M.D., Assistant Professor of Internal Medicine, Senior Consultant.
J. Jay Keegan, A.B., A.M., M.D., Professor of Surgery, Senior Consultant.
Earl F. Leininger, B.S., M.D., Clinical Associate in General Practice, Senior Consultant.
Ralph Herbert Luikart, M.D., Professor of Obstetrics and Gynecology, Senior Consultant.
James Sylvester McAvin, Ph.G., M.D., Associate in Radiology, Senior Consultant.
Aaron M. McMillan, A.B., M.D., Clinical Associate in General Practice, Senior Consultant.
Morris Margolin, A.B., M.D., Assistant Professor of Internal Medicine, Senior Consultant.
Willson Bridges Moody, A.B., M.D., Professor of Internal Medicine, Senior Consultant.
Harold Smith Morgan, M.D., Clinical Associate Professor of Obstetrics and Gynecology, Senior Consultant.
Herschel B. Morton, B.S., M.D., Clinical Associate Professor of Surgery, Senior Consultant.
Nathan Muskin, A.B., M.D., Instructor in Internal Medicine, Senior Consultant.
Friedrich Wilhelm Niehaus, B.S., M.D., Professor of Internal Medicine, Senior Consultant.
Theodore August Peterson, B.S., M.D., Senior Consultant in General Practice.
E. Burkett Reed, B.S., M.D., Associate Professor of Internal Medicine, Senior Consultant.
Sidney O. Reese, B.S., M.D., Clinical Associate Professor of Surgery, Senior Consultant.
Donald Jasper Wilson, B.S., A.B., M.D., Professor of Dermatology and Syphilology, Senior Consultant.

Active Faculty

James Richard Adamson, B.S., M.D., Assistant Instructor in Pathology.
Nathan Richard Adkins, B.S., M.D., Assistant Professor of Radiology.
Dean Craig Affleck, B.S., M.A., Ph.D., Professor of Medical Psychology, Psychiatry, Associate Dean.
John Andrew Aita, Ph.D., M.D., Associate Professor of Neurology, Associate Professor of Psychiatry, and Associate in Physical Medicine and Rehabilitation.

- John R. Allely, A.B., M.D., Assistant Instructor in Internal Medicine.
 George Thomas Alliband, B.S., M.D., Associate Professor of Ophthalmology.
 Rashid Abdulla Al-Rashid, B.S., M.D., Research Instructor in Pediatrics.
 Jurgén F. Althoff, M.D., Research Assistant, Pathology.
 R. Stephen S. Amato, B.S., M.A., Ph.D., Assistant Professor of Human Genetics,
 Department of Pediatrics.
 Lawrence Lloyd Anderson, A.B., M.D., Associate in Surgery.
 Thorwald Robert Anderson, A.B., M.D., Clinical Assistant Professor of Pathology.
 Zola Anderson, B.A., M.A., Assistant Instructor in Pediatrics.
 Carol Remmer Angle, A.B., M.D., Associate Professor of Pediatrics.
 William Dodge Angle, B.S., M.D., Associate Professor of Internal Medicine and Physiology.
 K. Don Arrasmith, A.B., M.D., Instructor, Division of Community Practice.
 Stanley Monrad Bach, B.A., M.D., Assistant Professor of Orthopedic Surgery and
 Anatomy and Associate in Physical Medicine and Rehabilitation.
 David LeRoy Bacon, B.S., M.S., M.D., Instructor in Internal Medicine.
 Paul Martin Bancroft, B.S., M.S., M.D., Clinical Associate Professor of Pediatrics.
 *William H. Bancroft, B.S., M.D., Assistant Instructor in Internal Medicine.
 Anthony Joseph Barak, B.S., M.S., Ph.D., Assistant Professor of Biochemistry.
 Kenneth L. Barker, B.S., M.S., Ph.D., Research Assistant Professor of Obstetrics and
 Gynecology and Assistant Professor of Biochemistry.
 John Lucian Barmore, M.D., Associate Professor of Surgery.
 John Hodgson Barthell, M.D., Clinical Instructor in Dermatology and Syphilology.
 George William Bartholow, B.S., M.D., Associate Professor of Psychiatry.
 Terence R. Barton, B.A., Director of Public Information, with rank of Assistant
 Instructor.
 Francis Frederick Bartone, A.B., M.D., Assistant Professor of Urology.
 Dennis D. Beavers, M.D., Assistant Instructor in Obstetrics-Gynecology.
 Meyer Beber, B.S., Ph.D., M.D., Professor of Internal Medicine and Associate Professor
 of Biochemistry.
 Melvin Dean Bechtel, M.D., Instructor, Division of Community Practice.
 William L. Beck, M.D., Instructor in Otorhinolaryngology.
 Edward T. Beitenman, B.S., M.D., Assistant Professor of Psychiatry.
 Charles Dudley Bell, B.A., M.D., Instructor in Dermatology and Syphilology.
 Arthur Lawrence Bennet, A.B., Ph.D., M.D., Professor of Physiology (Chairman of
 Department).
 Robert B. Bennett, A.B., M.S., Ph.D., Instructor in Physiology.
 Reba Ann Benschoter, B.A., M.S., Assistant Professor of Medical Teaching Aids,
 Psychiatry.
 Samuel G. Benson, B.S., M.S., Instructor in Physiology.
 Linda L. Berg, B.A., M.S.W., Assistant Instructor in Pediatrics.
 Bradley M. Berman, B.A., M.D., Instructor in Neurosurgery.
 Kenneth K. Berry, B.A., Ph.D., Assistant Professor of Psychiatry.
 William Morris Berton, M.D., Professor of Pathology.
 Zerehpash Changiz Bidari, M.D., Assistant Instructor in Internal Medicine.
 Albert S. Black, B.S., M.D., Assistant Professor of Surgery.
 Phyllis Ann Blease, B.S., Assistant Instructor in Pathology.
 Irvin LeRoy Blose, B.S., M.S., M.D., Instructor in Psychiatry.
 Alan Jay Blotcky, B.S., Instructor in Nuclear Physics, Department of Radiology.
 Robert Ernest Bodmer, B.A., M.D., Instructor in Radiology.
 William Carl Boelter, B.A., M.D., Associate in Obstetrics and Gynecology.
 Daniel G. Bohi, B.A., M.D., Assistant Professor of Obstetrics-Gynecology.
 Donald Robert Bohnenkamp, Demonstrator in Physical Medicine and Rehabilitation.
 Richard A. Bolamperfi, M.D., Assistant Professor of Radiology.
 Warren G. Bosley, A.B., M.D., Clinical Assistant Professor of Pediatrics.
 Cecil R. Boughn, B.A., Administrative Assistant to the President, with rank of
 Assistant Professor.
 John David Boyett, B.S., M.D., Assistant Professor of Internal Medicine.
 Rena E. Boyle, R.N., B.S., M.A., Ph.D., Professor of Nursing, Dean of the School of
 Nursing.
 Andrew Michael Bozena, B.S., M.D., Instructor in Obstetrics and Gynecology.
 Warren Quentin Bradley, A.B., M.D., Clinical Instructor in Radiology.
 Russell Charles Brauer, A.B., M.D., Assistant Professor of Surgery.
 John Grierson Brazier, A.B., M.D., Associate Professor of Internal Medicine.
 Raymond John Breed, B.A., Lecturer in Physical Medicine and Rehabilitation.
 Charles M. Bressman, A.B., M.D., Instructor in Internal Medicine.
 Dale E. Brett, B.A., M.D., Instructor in Surgery.
 Herman Henry Brinkman, B.S., M.D., Clinical Assistant in Surgery.

* On leave of absence.

- John Andrew Brown, III, B.S., M.D., Instructor in General Practice.
 Kenneth W. Brown, B.A., M.D., Assistant Professor of Administrative Medicine.
 Kenneth Murle Browne, A.B., M.S., M.D., Associate Professor of Surgery.
 Karl Wayne Bruce, B.S., M.S., D.D.S., Instructor in Surgery and Radiology.
 John Hobart Brush, A.B., M.D., Associate Professor of Surgery.
 Donald John Bucholz, A.B., B.S., M.A., M.D., Assistant Professor of Internal Medicine.
 Paul Gordon Bunker, B.S., M.D., Participating Consultant in Otorhinolaryngology.
 Richard Arndt Bunting, B.S., M.D., Assistant Professor of Radiology.
 Charles Wilhelm Burkland, A.B., B.S., M.D., Associate Professor of Neurosurgery.
 Dwight Willard Burney, Jr., B.A., M.D., Assistant Professor of Orthopedic Surgery.
 David Samuel Burton, Demonstrator in Physical Medicine and Rehabilitation.
 Joyce E. Byllesby, B.A., M.D., Assistant Instructor in Pathology.
 James C. Cadwallader, A.B., M.D., Assistant Instructor in Obstetrics-Gynecology.
 Olin James Cameron, M.S., M.D., Professor of Dermatology and Syphilology.
 Sheila M. Carey, B.S.N., Assistant Instructor in Pediatrics.
 Oscar Carp, B.S., M.D., Associate Professor of Otorhinolaryngology.
 James Goodlow Carter, B.A., M.D., Instructor in Anesthesiology, Surgery.
 William S. Carter, B.S., M.D., Instructor in Otorhinolaryngology.
 Michael J. Carver, B.S., M.S., Ph.D., Professor of Biochemistry and Research Professor of Psychiatry.
 Ralph J. Cerny, A.B., M.H.A., Assistant Hospital Administrator with Rank of Assistant Instructor.
 Charles C. Chapple, M.D., Professor of Pediatrics.
 George A. Charnock, H.N.C., Ph.D., Research Assistant in Biochemistry.
 Henri E. Chehab, M.D., Assistant Professor of Obstetrics-Gynecology.
 LeGrande Dwight Cherry, B.S., M.D., Clinical Assistant Professor of Surgery.
 Donald L. Chilcoat, A.B., M.S., M.D., Assistant Instructor in Internal Medicine.
 K.V.R. Choudari, D.V.M., M.S., Research Associate in Pathology.
 Robert Morris Cochran, B.S., M.D., Associate in Surgery and Associate in Anatomy.
 John Daniel Coe, A.B., M.D., Associate Professor of Surgery.
 Frank Cole, B.S., M.D., Clinical Associate in Surgery.
 Francis C. Coleman, M.D., Clinical Assistant Professor of Pathology.
 Robert Marshall Collins, B.S., M.D., Assistant Professor of Obstetrics and Gynecology.
 Ole B. Conn, Assistant Instructor.
 Robert Edward Connor, B.S., Chief Pharmacist with rank of Assistant Instructor.
 John H. Copenhagen, B.S., Ph.D., Assistant Professor of Psychiatry and Biochemistry.
 Robert James Corliss, B.S., M.D., Associate Professor of Internal Medicine and Pediatrics.
 Walter Thomas Cotton, B.S., M.D., Associate Professor of Obstetrics and Gynecology.
 Maldon B. Crabill, B.S.C.E., M.P.H., Lecturer in Public Health and Preventive Medicine.
 Michael Crofoot, A.B., M.D., Professor of Pediatrics.
 Herbert R. Crowley, B.A., M.D., Assistant Professor of Otorhinolaryngology.
 Dale Alan Cruise, B.S., M.D., Assistant Professor in Obstetrics and Gynecology.
 Denis Joseph Cuka, B.S., M.D., Assistant Professor of Surgery.
 Marion Rose Cunningham, B.S., Instructor in Psychiatry.
 Louis T. Davies, A.B., B.S., M.A., M.D., Clinical Assistant Professor of Surgery.
 J. Allan Davis, B.S., M.D., Associate in Otorhinolaryngology.
 John Byron Davis, B.S., M.D., Associate Professor of Surgery.
 John Calvin Davis, B.S., M.D., Assistant Professor of Internal Medicine and Assistant Professor and Acting Chairman Department of Preventive Medicine and Public Health.
 Neal Balbach Davis, M.D., Associate Professor of Urology.
 Richard B. Davis, B.S., M.D., Ph.D., Associate Professor, Division of Hematology, Internal Medicine.
 Stanley L. Davis, B.A., M.D., Assistant Instructor in Internal Medicine.
 William Clayton Davis, M.D., Professor of Surgery.
 James W. Delavan, M.D., Assistant Instructor in Surgery.
 William A. DeRoin, B.S. in Med., M.D., Instructor, Division of Community Practice.
 John Lage Dewey, A.B., M.D., Instructor in Internal Medicine.
 William John Dickerson, A.B., M.D., Assistant Professor of Internal Medicine.
 Byron M. Dillow, B.S., M.D., Assistant Instructor in Surgery.
 Howard A. Dinsdale, A.B., M.D., Instructor in Ophthalmology.
 James William Dinsmore, B.S., M.D., Instructor in Orthopedic Surgery.
 Gloria Dreessen, B.S., Assistant Instructor in Pathology.
 George R. Dubes, B.S., Ph.D., Associate Professor of Microbiology and Section Head of Viral Genetics.
 Violet DuBois, B.S., M.P.H.A., Lecturer in Preventive Medicine and Public Health.
 Burton Jay Dunevitz, B.S., Lecturer in Physical Medicine and Rehabilitation.

- Arthur Lovell Dunn, A.B., A.M., Ph.D., Assistant Professor of Biochemistry and Biophysics in Radiology.
- Dennis P. Dunning, A.B., M.S., Assistant Instructor in Pediatrics.
- Stephen John Dutch, Jr., A.B., M.D., Associate Professor of Neurology and Assistant Professor of Pediatrics.
- Carol Lou Dworak, B.S., Assistant Instructor in Radiology.
- Frank Lewis Eagle, B.S., M.D., Associate Professor of Ophthalmology.
- Alvin M. Earle, B.S., M.S., Ph.D., Assistant Professor of Anatomy.
- Louise Foster Eaton, A.B., M.D., Assistant Professor of Psychiatry and Pediatrics.
- Merrill T. Eaton, A.B., M.D., Professor of Psychiatry (Chairman of Department); Director, Nebraska Psychiatric Institute.
- Michael S. Ebadi, B.A., M.S., Ph.D., Research Assistant Professor of Pediatrics, Assistant Professor of Pharmacology.
- Dale Walter Ebers, B.S., M.D., Associate in Pediatrics.
- Robert Earl Ecklund, B.S., M.D., Assistant Professor of Internal Medicine.
- Jesse C. Edwards, B.S., M.S., Instructor in Administrative Medicine, Department of Pediatrics.
- Robert W. Ehrlich, A.B., M.S., M.D., Clinical Instructor in Surgery.
- James D. Eisen, B.S., M.S., Ph.D., Associate Professor of Human Genetics, Psychiatry, and Associate Professor of Pediatrics.
- Alfred George Ellick, A.B., J.D., Associate Professor of Medical Jurisprudence (Chairman of Department).
- Robert James Ellingson, B.S., M.A., Ph.D., M.D., Professor of Medical Psychology, Psychiatry, and Professor of Physiology.
- H. Chandler Elliott, B.A., M.A., Ph.D., Professor of Anatomy.
- James Howard Elston, M.D., Instructor in Obstetrics and Gynecology.
- Arden Waters Engstrom, B.S., M.S., Instructor in Pathology.
- Charles G. Erickson, B.S., M.D., Instructor in Pediatrics.
- Geraldine Eyberg, R.N., Assistant Instructor in Pediatrics.
- Kathleen G. Fahey, B.A., M.A., Instructor in Library Science.
- Robert Gerald Faier, B.S., M.A., M.D., Instructor in Ophthalmology.
- Robert D. Faulkner, B.S., M.S., Ph.D., Assistant Professor of Biochemistry and Research Associate in Biochemical Pharmacology.
- Robert Feldman, B.S., Research Assistant in Pathology.
- Alessandro Ferrero, M.D., Research Associate in Pathology.
- Nancy Mary Fieber, B.S., Assistant Instructor in Pediatrics.
- Warren Waldemar Fieber, B.S., M.D., Assistant Professor of Anesthesiology, Surgery.
- K. J. Fijan, B.S., M.D., Clinical Instructor in Pediatrics.
- John Clayton Filkins, B.S., M.D., Associate Professor of Ophthalmology.
- Alister Ian Finlayson, M.A., M.D., Professor of Neurological Surgery.
- Rex Rolland Fischer, B.S., M.D., Assistant Instructor in Obstetrics and Gynecology.
- Eugene Fisher, M.D., Instructor, Division of Community Practice.
- Donald Max Fitch, A.B., B.S., M.D., Assistant Professor of Pathology.
- Martin T. Fleming, B.A., M.S.S.W., Assistant Instructor in Pediatrics.
- Peggy Jane Fletcher, B.A., Assistant Instructor in Pathology.
- Diana C. Focht, B.S., M.A., Assistant Instructor in Pediatrics.
- John F. Foley, B.S., M.D., Ph.D., Professor of Internal Medicine and Chief Coordinator, Medical Cancer Therapy Program.
- Miles E. Foster, A.B., B.S., M.D., Assistant Professor of Pathology.
- Muriel Naomi Frank, A.B., M.D., Assistant Professor of Anesthesiology, Surgery.
- Maurice D. Frazer, B.S., M.D., Clinical Associate Professor of Radiology.
- Gordon Eric Fredrickson, B.S., M.D., Instructor in Dermatology and Syphilology.
- Donald E. Freeman, B.S., M.D., Assistant Instructor of Anesthesiology, Surgery.
- Fred J. Fricke, B.S., M.S., M.D., Associate in Physical Medicine and Rehabilitation.
- Walter J. Friedlander, B.A., M.D., Professor of Neurology (Chairman of Department), Professor of Anatomy.
- Dwight Maurice Frost, B.S., M.D., Assistant Professor of Physical Medicine and Rehabilitation.
- Samuel Isaiah Fuenning, B.S., M.S., M.D., Associate Professor of Preventive Medicine and Public Health.
- Janice Kay Funk, B.A., M.S.W., Assistant Instructor in Psychiatry.
- Humberto Garcia, M.D., Assistant Professor of Pathology.
- Paul Jay Gardner, A.B., M.S., Ph.D., Assistant Professor of Anatomy.
- Charles Gareiz, A.B., M.S.W., Assistant Professor of Psychiatric Social Work, Psychiatry.
- Richard Earl Garlinghouse, A.B., M.D., Associate Professor of Obstetrics and Gynecology.
- Robert O. Garlinghouse, A.B., M.D., Clinical Assistant Professor of Surgery.
- Dennis J. Garwacki, B.S., M.D., Instructor in Neurology.
- Edward E. Gaiz, B.S., M.S., Ph.D., Instructor in Pharmacology.

Thomas D. Gensler, M.D., Instructor, Division of Community Practice.
John Harold George, M.D., Instructor in Obstetrics and Gynecology.
John D. German, B.A., M.D., Associate Professor of Surgery.
Herbert Gershon, Assistant Instructor in Anesthesia, Surgery.
Carl Frederick Gessert, A.B., M.S., Ph.D., Associate Professor of Pharmacology (Acting Chairman).
Gordon Everett Gibbs, A.B., M.A., Ph.D., M.D., Professor of Pediatrics.
Harold Gifford, Jr., B.S., M.D., Professor of Ophthalmology (Chairman of Department).
Louis Gilbert, A.B., M.D., Clinical Instructor in Urology.
Robert W. Gillespie, B.S., M.D., Assistant Professor of Surgery.
Ray O'Herin Gillies, Jr., B.S., M.D., Associate in Otorhinolaryngology.
Louis James Gogela, B.S., M.A., M.D., Clinical Assistant Professor of Surgery.
Julius Charles Goldner, B.S., M.D., Assistant Professor of Psychiatry.
Dale Preston Joel Goldsmith, B.S., M.A., M.S., Ph.D., Associate Professor of Biochemistry.
Jewell Goodloe, B.S., Assistant Instructor, Psychiatry.
John Leo Gordon, B.S., M.D., Instructor in Surgery.
John Robert Gordon, M.D., Assistant Professor in Internal Medicine.
Russell Leroy Gorihey, B.S., M.D., Assistant Professor of Obstetrics and Gynecology.
Gary D. Graham, B.A., M.S., Assistant Instructor in Physiology.
William Ernest Graham, A.B., M.D., Assistant Professor of Internal Medicine.
Robert S. Grant, M.D., Clinical Instructor in Pediatrics.
Harris Breiner Graves, A.B., M.D., Instructor in Internal Medicine.
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Melvin Greenblatt, B.A., M.D., Associate Professor of Pathology.
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Fred Grossman, B.A., M.D., Instructor in Urology.
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 Gerald C. Miller, B.S., M.D., Assistant Instructor in Surgery.
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 Samuel F. Moessner, B.S., M.D., Clinical Instructor in Surgery.
 *Ahmed Mohiuddin, B.S., Instructor in Radiology.
 Ulrich Mohr, M.D., Senior Visiting Professor of Pathology.
 *Ruggero Montesano, M.D., Assistant Professor of Pathology.
 Ralph Cory Moore, B.S., M.D., Professor of Radiology.
 Paul Keniston Mooring, B.A., M.D., Associate Professor of Pediatrics.
 Haskell Morris, A.B., M.D., Assistant Professor of Internal Medicine, Director of Student Health Service, Associate in Physical Medicine and Rehabilitation (Acting Chairman of Department).
 Margaret Morris, B.S., Assistant Instructor in Pathology.
 William E. Morrison, B.S., M.S., Ph.D., Associate Professor of Pediatrics.
 William Howard Morrison, B.S., M.D., Professor of Ophthalmology.
 Carlos Roberto Mota, B.S., M.D., Assistant Professor of Surgery.
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 Mary Jo Mulcahy, B.S., Assistant Instructor in Obstetrics and Gynecology.
 William Charles Mulry, B.A., M.D., Instructor in Radiology.
 Willis Philip Mundt, M.D., Assistant Professor of Radiology.
 Horace Varnum Munger, A.B., M.D., Clinical Assistant Professor of Urology.
 Merle McNeil Musselman, B.S., M.D., Professor of Surgery (Chairman of Department).
 Grant George Myers, B.S., M.S., Ph.D., Assistant Professor of Electrical Engineering, Internal Medicine, Assistant Professor of Physiology.
 Orvis A. Neely, B.S., M.D., Clinical Assistant Professor of Radiology.
 Delbert Delose Neis, A.B., M.D., Associate Professor of Surgery.
 Joanna Nelle, B.S., Assistant Instructor in Psychiatry.
 Norma Mae Nelson, B.M.Ed., M.S.W., Instructor in Obstetrics and Gynecology.
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 Karl Friedrich Niehaus, M.D., Instructor in Internal Medicine.
 Donald Charles Nilsson, M.D., Assistant Professor of Pediatrics.
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 William Edwin Nutzman, A.B., M.D., Assistant Professor of Internal Medicine.
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 William Frank Nye, B.A., M.A., M.D., Instructor in Ophthalmology.
 Byron Bay Oberst, A.B., M.D., Assistant Professor of Pediatrics.
 Leo E. O'Brien, M.D., Assistant Instructor in Internal Medicine.
 John P. O'Gara, B.S., M.D., Instructor in Surgery (Anesthesia).
 Kiyoshi Patrick Okura, B.A., M.A., Instructor in Psychiatry.
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 Richard Otto Olson, M.D., Assistant Instructor in Surgery.
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 Robert George Osborne, B.S., M.D., Assistant Professor of Psychiatry.
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 Harlan Louis Papenfuss, A.B., M.D., Assistant Professor of Pathology.
 Donald E. Parkison, A.B., M.D., Instructor, Division of Community Practice.
 Orest Joseph Parrillo, M.D., Assistant Professor of Internal Medicine.
 James E. Parsons, B.S., M.S., Instructor in Microbiology.
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 Frederick F. Paustian, B.S., M.D., Professor of Internal Medicine and Physiology.
 Warren Harland Pearse, B.S., M.D., Professor of Obstetrics and Gynecology (Chairman of Department), Assistant Dean.
 Paul Hammond Pearson, M.D., C. Louis Meyer Professor of Child Health, Pediatrics, and Professor of Preventive Medicine.

* On leave of absence.

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- Earl Stanley Pederson, B.S., M.A., M.D., Professor of Radiology and Assistant Professor of Anatomy.
- Richard J. Pellegrino, B.A., M.D., Instructor in Neurology and Pediatrics.
- John Walker Pemberton, B.S., M.S., M.D., Instructor in Ophthalmology.
- Maurice Lewis Pepper, B.S., M.D., Associate Professor of Internal Medicine.
- Samuel H. Perry, A.B., M.D., Instructor in Pediatrics.
- George Henry Pesier, A.B., M.D., Assistant Professor of Surgery.
- Margaret Hancock Peterson, A.B., M.A., M.D., Assistant Professor of Psychiatry.
- Paul L. Peterson, M.D., Clinical Assistant Professor of Otorhinolaryngology.
- George Francois Pinne, M.D., Associate Professor of Dermatology and Syphilology.
- Richard C. Pitner, M.D., Instructor in Orthopedic Surgery.
- Ruth ErDena Pohle, B.A., Assistant Instructor in Pathology.
- John Wesley Porter, B.S., M.D., Assistant Professor of Surgery.
- Stanley Ernest Potter, M.D., Associate Professor of Surgery.
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The College of Medicine meets the requirements of the most exacting state examining and licensing boards. Its diploma grants the holder all privileges accorded to graduates of any medical college in the United States. It is a member of the Association of American Medical Colleges and is approved by the Council of Medical Education and Hospitals of the American Medical Association. It maintains high standards in instructional staff and content of courses.

The College of Medicine operates a four-year, fully accredited program leading to the Doctor of Medicine degree. The University Hospital also provides internship and residency programs in most of the major medical specialties.

The course of medicine covers four years of 36 to 48 weeks each. The first two years in medicine, in general, include those fundamental sciences which form the basis for clinical studies of the last two years. Reflecting the changing needs of a nation and a corresponding expansion of medical colleges, an increased emphasis is being directed toward curriculum changes which will introduce both freshman and sophomore students to clinical applications of these fundamental subjects. The last two years are spent largely in the study of patients in the wards and outpatient departments of the hospital and its component facilities such as the Eppler Institute for Research in Cancer and Allied Diseases, the C. Louis Meyer Children's Rehabilitation Institute, and the Nebraska Psychiatric Institute as well as affiliated private hospitals. Substantial numbers of elective courses are available to students who wish to take more specific career directions in their medical education.

The objective method is followed in laboratories and clinical instruction. In all courses students are encouraged to pursue individual work, meeting in small groups with laboratory and clinical instructors.

APPLICATIONS FOR ADMISSION



Admission to the University of Nebraska College of Medicine is granted without regard to race, color, or religion.

Printed application forms are available at the Registrar's Office, College of Medicine, University of Nebraska, 42nd Street and Dewey Avenue, Omaha, Nebraska 68105. Students applying for any given class must have their applications completed by November 1st of the year preceding intended entrance.

In considering scholastic records of applicants, greater weight is given to the quality of work than to an excess of credit hours over the minimum required number. Consideration is given also to appraisals of character, personal interviews, scores on the Medical College Admission Test and general fitness and promise of the candidate.

A limited number of students from states other than Nebraska and not more than two students from foreign countries will be accepted for the freshman class. It is the policy of the Committee on Admissions to require that foreign students spend at least one year, and preferably two, studying in an undergraduate college in this country before applying for admission to the College of Medicine. This policy has been established in order that the applicant may become familiar with the language, customs, and methods of teaching in the United States, and so that the Committee can obtain a better evaluation of his qualifications and preparation for medicine.

APPLICATION PROCEDURE



Applicants for admission to the College of Medicine must present the following:

1. A completed application form. The blank forms are available from the Assistant Registrar of the College of Medicine;
2. Two *recent* unmounted photographs, 2 × 2 inches head size;
3. An official transcript sent directly from each college or university attended;
4. Two character appraisals from professors of premedical sciences, preferably chemistry, zoology or physics; or official report of Pre-Med Committee;
5. The result of the Medical College Admission Test. Applicants will take the test not later than the fall of the year preceding intended entrance. Information concerning this test may be obtained from the premedical adviser of the College of Arts and Sciences; from the Psychological Corporation, 304 East 45th Street, New York, New York, 10017; or the Assistant Registrar of the College of Medicine. Students should communicate directly with The Psychological Corporation for specific details.

A personal interview with members of the Committee on Admissions is required of all accepted students. Interview sessions will be held at the campus of the University of Nebraska in Lincoln in November or December. Interviews will be given at the College of Medicine on stated dates. Inquiries should be made of the premedical advisers at Lincoln or of the Assistant Registrar of the College of Medicine regarding appointments for interviews.

A fee of \$5.00 must accompany the application of a student who is not a legal resident of Nebraska. Remittance should be made by check or post office money order and made payable to the University of Nebraska College of Medicine. Currency should not be sent. The fee will cover the cost of handling the application and will not be refunded.

Any applicant who has previously applied for admission and has not been accepted or who fails to enroll after an acceptance must re-apply in the regular manner if he wishes consideration for a subsequent year.

Advanced Standing.—Application for admission to the second or third year medical classes will be considered only from students attending medical schools approved by the Council on Medical Education and Hospitals of the American Medical Association and only if a vacancy exists. An

applicant for admission to advanced standing must follow the regular application procedure and must furnish evidence that he has satisfactorily completed courses equivalent in kind and amount to those taken by the class to which admission is sought. He must also present a letter of recommendation from the dean of the medical school last attended. The University of Nebraska College of Medicine reserves the right in every case to give examinations in any or all subjects in which credit is requested.

No student coming from another school will be allowed any privileges in this school which would have been denied him in the school which he leaves.

No student will be admitted to advanced standing in any class while he has a delinquency in any subject. No student may become a candidate for graduation unless he has spent the last two years in residence at this college.

In accordance with the recommendation of the Association of American Medical Colleges, the College of Medicine does not grant any time credit toward the Doctor of Medicine degree to holders of a bachelor's degree; this means that the total time spent by each student taking his medical degree must include, as a minimum, four years of registration in a medical college, the last two years of which must be in residence in the University of Nebraska College of Medicine.

The granting of transfer credit is at the discretion of the Committee on Admissions. Admission to any class does not necessarily carry with it credit in all work previously done by the class since the Committee on Admissions has the right to demand satisfactory evidence of the completion of previous work in that subject equal to that required of the students of this College, and in case the work is not equal to such requirement, the deficiency stands against the student as an "incomplete" until removed.

If a student has been dropped from another medical school because of poor scholarship or unsatisfactory conduct, he is not acceptable for admission to the University of Nebraska College of Medicine except in rare and unusual circumstances.

GENERAL CONSIDERATIONS IN PLANNING A MEDICAL EDUCATION



The educational program leading to the degree of Doctor of Medicine begins before the student enters medical school. The content and quality of his professional training are vital. It is essential that the student and his advisers have a clear understanding of the objectives which are sought.

The course of study in the College of Medicine is designed to produce an unspecialized physician, soundly grounded in modern science, who, after a variable period of postgraduate education and training, is competent to enter his chosen field of medicine. In broad scope, medical education has three end products. The first, in terms of numbers, is the practicing physician. In addition, the medical investigator and the medical teacher are products of the same educational process. All three are essential to the growth and application of knowledge in the field of medicine. Two of these, the practicing physician and the medical teacher, must be capable both of practicing an art and of applying the natural sciences to medicine. Furthermore, relatively few medical investigators will do research without some responsibility in the teaching or practice of medi-

cine. The Doctor of Medicine, whether he embodies one or all three of these products, deals with people as individuals and as a society. The art of applying scientific methods in the preservation of health and in the treatment of the ill requires that the physician not only be well trained in these methods but also well aware of their limitations.

The growing complexity of our society makes it increasingly necessary that the physician be well founded in the humanities which put him in touch with his society, not only to recognize health needs and to be informed of available facilities, but also to gain an understanding and compassion which are basic to the art of healing. The rapid development of medicine as an applied science, requiring quantitative precision and analytical reasoning in diagnostic and therapeutic procedures, is also placing an increasing premium upon excellence of preparation in these areas. The minimum educational requirements of the past are no longer adequate.

While it should be recognized that there is almost no knowledge or experience which cannot be of value to one preparing for the practice of medicine, it is very clear that the optimum use of one's time in such preparation can be realized only when wise choices are made on the basis of relative value. With time at a premium, the fact that there are directions of emphasis which are definitely more helpful than others is reason enough for listing recommendations for admission to the College of Medicine. This is only a beginning, however, and many choices of electives must be made in high school and college to complete a good preparation for the study of medicine. Recommendations here are intended not to exclude any field of major interest but rather to point to areas in which the limited available time can be spent most advantageously. Not only is the area of study to be considered but also the academic level. When more than one course in the same subject is offered, the student is strongly advised to choose the more substantial rather than the more elementary course. Occasionally, a choice for a given course is wisely made on the basis of the excellent quality of instruction and the depth of scholarship involved irrespective of the area of study.

The following specific educational recommendations have been chosen in recognition of the fact that medicine is progressively becoming more of a quantitative science. To follow adequately and to use these current developments the student must be facile with quantitative and analytical methods. However, the physician still must minister to the needs of the whole patient, and he must be prepared to assume an important role in his society. Thus it is imperative that the student acquire a sufficiently broad experience to meet these demands.

SPECIFIC EDUCATIONAL RECOMMENDATIONS



High School.—This should be a strong college preparatory course. It is recommended that the student complete two years of study in a foreign language, four years of English, and as much mathematics and science as possible.

College or University.—A minimum of 90 semester hours (three years of college work) in an accredited college is normally required. In exceptional circumstances, 60 semester hours may be accepted. To provide an opportunity for scholarship in depth, the completion of a college major is strongly recommended. The completion of a bachelor's degree is desirable. In most instances, preparation for medical school can best be achieved by including the following courses:

Course

Minimum Semester Hours

CHEMISTRY	14
The recommendation is for two semesters of general or inorganic chemistry (analytical chemistry may serve as part of this requirement) and a two-semester, complete course in organic chemistry.	
BIOLOGY	12
Unless biology is chosen as the college major, additional electives in this field which may significantly duplicate courses given in medical school are less advantageous to the student than other electives.	
PHYSICS	8
This should include a complete course in physics. The student should register for the course which is commensurate with his mathematical background if more than one is available.	
ENGLISH	12
This must include at least one year of composition.	
MATHEMATICS	9
This should include material through introductory calculus. Familiarity with statistics and with the principles of computers is highly desirable. If advanced mathematics has been completed through four years in high school, this college recommendation may be modified.	
FOREIGN LANGUAGE	
Although no college foreign language is required, this is considered a valuable elective. Also, it should be understood that this is required by the College of Arts and Sciences of the University of Nebraska, as well as by most other colleges, for the bachelor's degree. It is also required for the degree of Doctor of Philosophy and should be anticipated by any student who is considering graduate work.	
ELECTIVES	
The student is urged to select courses from the general field of the humanities and behavioral sciences and not to limit his training to the above scientific subjects.	

Credits offered from professional schools which do not regularly receive arts college credit are not accepted for premedical college requirements.

A student applying to the College of Medicine should have a grade average of at least B in all the required science courses. The grade of B is based upon the grading system of the University of Nebraska. The equivalent in other grading systems will be determined by the Assistant Registrar, College of Medicine, and the Committee on Admissions. In determining the equivalent, the grading system and the scholarship requirements of the college or university wherein the work was completed will be taken into consideration.

REGISTRATION AND ADMISSION TO CLASSES



When an applicant receives notice that he has been accepted for entrance to the College of Medicine, he is required to send a deposit of \$25. This is applied as part payment of the tuition fee for the first semester or is forfeited if the applicant fails to register in the class for which he was accepted.

Students eligible for Veterans Administration benefits must submit on day of registration a Certificate of Eligibility (VA 21E 1993), approved for a program with the objective of Doctor of Medicine degree, indicating the University of Nebraska College of Medicine as place of training.

Registration is accomplished on the day indicated in the official calendar. A fee of \$5.00 is charged any student who, unless excused by the Dean, seeks to register later than this day. A fee of \$5.00 is charged for reregistration. Any change whatever in a registration once made is considered as a reregistration. No work done in the College of Medicine may be credited without proper registration. No student may add any

subject to his schedule or drop from it any subject for which he has been regularly registered except at specified times.

Class Standing and Promotion.—The standing of a student in any course is determined by the instructors in charge of the subject, by examinations, by personal observation and by other methods of evaluation.

The grading system at the University of Nebraska College of Medicine is as follows:

Quality Point		
Grade	Average	
A	4.0	Outstanding achievement, superior
B	3.0	Above average
C	2.0	Average, satisfactory work
D	1.0	Inferior but passing
F	0.0	Failure

The above letter grades do not have or require fixed numerical percentage equivalents.

Any course which, for good reason, has not been completed, but in which progress has been satisfactory, may be reported as "incomplete." A student may not register for either the sophomore or the junior year with an existing incomplete still on his record. A senior student must remove any incomplete, acquired during the third year, by the middle of the senior year.

A student must attain a Q.P.A. of 2.0 in any single year to be advanced to the next year. The *only* exception to this rule is the freshman student who has not failed any course but whose Q.P.A. is less than 2.0. In this situation the Scholarship Evaluation Committee will determine whether the student may advance to the second year in a status of *scholastic probation* or recommend other suitable action. The student must then achieve a Q.P.A. sufficiently high so that his cumulative average at the end of the second year is 2.0. The student will then be removed from scholastic probation.

A student in the first or second year of medical studies who fails only one course, if other course grades are satisfactory, may repeat that course in a summer school session provided the course for which he plans to register is approved by the department in which failure occurred.

Any student who fails more than one subject in any academic year may petition the Admissions Committee to be permitted to repeat the entire year or to repeat only those courses in which failure occurred.

Any student who is reported to be failing in half or more of the course hours of the academic year in which he or she is registered may be asked to withdraw, if in the judgment of the course instructors and of the Scholarship Evaluation Committee continuation would appear to be ill advised. Student discipline will remain unchanged.

A student who has failed twice here or elsewhere in the same subject is not eligible for registration at this college.

Comprehensive Examinations.—Students who are completing the sophomore year will be required to take National Board Part I Examinations.

For promotion to the junior year a student must:

1. Achieve a Q.P.A. sufficiently high so that his cumulative average at the end of the second year is 2.0.
2. Eligibility to enter the third year will be determined on the basis of (a) the student's average grades in the first and second years (see #1 above), and (b) his performance on National Board Part I.

At the present time a minimum score of 70 on National Board Part I is required to satisfy 2b above when advancement is considered for each student by the Scholarship Evaluation Committee. In the event a student fails to meet College of Medicine standards on Part I, he or she will be required to repeat this examination at the next scheduled date (September). Should failure occur again the student may petition the Committee on Admissions to (a) be allowed to repeat the sophomore year and thereafter successfully pass Part I or (b) be allowed a leave of absence to engage in special study in areas of deficiency and to again repeat Part I at the next scheduled date. Upon successful completion of Part I, the student will be declared eligible for advancement, or if unsuccessful will be dropped from the class.

Part of the evaluation of students completing the fourth or senior year is a comprehensive examination. The senior comprehensives usually include National Board Part II Examinations.

Student Discipline.—Student discipline will be handled by the Dean of the College of Medicine. A student who, by quality of work or conduct, indicates an unfitness to enter the medical profession may be required at any time to withdraw from the medical college. Recommendations for suspensions, dismissals, or other suitable action as the case warrants, will be made to the faculty of the College of Medicine, the Chancellor, and the Board of Regents. The Dean may appoint a committee of the faculty to advise him on such matters.

Absence or Withdrawal.—Attendance at less than 80 per cent of the scheduled lectures and recitations or 85 per cent of the scheduled laboratory and clinical hours constitutes a failure in any course and shall be so reported.

The Dean of the College of Medicine is the adviser of all students in the College of Medicine. A leave of absence for a short time may be granted by the Dean. This is merely a justification for absence and not an excuse from any work. If a student in good and honorable standing finds it necessary to withdraw from the University before the close of a quarter, the Dean grants him permission to do so. If he is in good standing and is not a minor, he is given honorable dismissal from the University at his own request; if a minor, at the request of his parents or guardian.

REQUIREMENTS FOR GRADUATION



The degree of Doctor of Medicine is granted only under the following conditions:

1. The candidate must be at least 21 years of age;
2. He must possess a good moral reputation;
3. He must have complied with all the requirements for admission;
4. He must have pursued the study of medicine for at least four years and must have passed all required courses and examinations of the College of Medicine, University of Nebraska (the last two years' work must have been taken at this institution);
5. He must have written an acceptable paper on an examination posed by the Examinations Committee during the senior year, and also have passed all departmental examinations;
6. He must have written and presented an acceptable, typed senior thesis;
7. He must have discharged all indebtedness to the University of Nebraska.

The executive faculty may select not more than five students from the top 10 per cent of the graduating class and recommend them for the degree of Doctor of Medicine with Distinction.

The executive faculty may also select not more than two students from the top 10 per cent of the graduating class who have shown outstanding scholarship or who have made an outstanding contribution to medical science and recommend them for the degree of Doctor of Medicine with High Distinction.

Courses Leading to the Degrees of Bachelor of Arts or Bachelor of Science and Doctor of Medicine.—Students who have transferred from the University of Nebraska College of Arts and Sciences may at the end of their fourth year earn the Bachelor of Arts degree or Bachelor of Science degree by:

1. Completing the group requirements of the College of Arts and Sciences;
2. Completing two minors or one major;
3. Using the subjects of the first year of the medical course as a major, all of which must be completed satisfactorily.

Both of these degrees are conferred by the College of Arts and Sciences at a Commencement on the Lincoln campus.

Candidates for baccalaureate degrees in institutions other than the University of Nebraska may arrange with their colleges to accept transcripts of the work of the first two years in medicine to apply to such degrees, or otherwise satisfy the requirements of those institutions.

Courses Leading to the Degree of Bachelor of Science in Medicine.—Only students presenting premedical college credits of high standard and who have satisfactorily completed all courses of the first two years in medicine, the last year of which shall be in residence in this institution, but who have not fulfilled the requirements for the degree of Bachelor of Science or Bachelor of Arts in the College of Arts and Sciences, may become candidates for the degree of Bachelor of Science in Medicine.

FEES AND EXPENSES*



All students who are legal residents of Nebraska and who carry a full student load will pay a single annual fee of \$650. Nonresident students will be charged a single annual fee of \$1300. Adjustments may be made in the case of students carrying less than the full student load. One-half of the tuition is due at registration, the balance on January 30.

The annual fee includes matriculation, registration, medical, laboratory, library, diploma, and course fees. In case of undue usage of materials or breakage or loss of equipment other than that allotted to each course, and because of negligence on the part of the student, a penalty charge will be levied based on the fair value of the material and equipment so lost or broken.

Fee Refunds.—A student who withdraws from the University during any term for which he registered is entitled to claim a refund of a portion of his fees. A refund schedule is available at the Finance Office.

Miscellaneous Fees.—Candidates for a degree to be awarded at public exercises shall be present at such exercises, except as herein provided. A candidate must make application and show just cause in order to obtain the necessary faculty recommendation to receive a degree *in ab-*

* Fees are subject to change.

sentia. Candidates to whom diplomas or certificates are awarded in *absentia* shall pay a special fee of \$10. The following fees are not included in the schedule listed above:

Late registration	\$ 5.00**
Transcript or certificate of graduation:	
One copy of either furnished free	0.00
For each additional copy of either	1.00
Degree in absentia	10.00
Special examination, each course	5.00
Photostatic copy of diploma, 2 copies	1.00
Cap and gown rental fee—amount fluctuates.	

Expenses.—Board can be obtained in the vicinity of the College campus at a cost of approximately \$20 to \$25 a week and comfortable rooms for about \$40 a month. Students rooming together can obtain comfortable rooming quarters at slightly less than this amount. One hundred twenty-five to one hundred seventy-five dollars a year should be allowed for books and instruments. The average expense of the student for a school year, including board and room, books, instruments (exclusive of microscope and other special equipment) and all fees is between \$2200 and \$2500.

MISCELLANEOUS INFORMATION ◇ ◇

Form of Payment.—To avoid misunderstanding as to the amount charged for fees, checks on personal accounts will be received only when written for the exact amount of the fees. Parents or guardians should write checks for fees and for other expenses separately; if this is not done, students should deposit funds in a local bank and give personal checks for the amounts of the fees.

Remittance by mail should be by draft, money order, or cashier's check. Do not send coin or money except by registered mail. It is impossible to trace money lost in the mail and University officials cannot be held responsible for such loss.

Housing.—Although the College of Medicine has no on-campus housing for medical students, the Assistant Registrar's Office maintains listings of rooms, apartments, duplexes, and houses reported available.

Nonresident Students.—A student's right to classification as a resident for purposes of registration in a state educational institution must be determined under the provisions of Nebraska Revised Statutes of 1943, Sec. 85-502 (R.S. Supp., 1965).

Each semester, as students complete their registrations, they will be required to certify to the accuracy of the personal information asked for on the registration form, including their resident or nonresident status.

Usually a student is a nonresident if any of the following is true:

1. Their parents live in another state.
2. Their parents have resided in Nebraska and now have moved out of the state. (They and you become nonresidents even though property may still be owned in Nebraska.)
3. Their parents are in the Armed Forces from a home in another state, even though they may now be living in Nebraska.
4. The student has recently lived and been employed in another state although originally from Nebraska.

** This charge is made to all students paying during the first week following the date the tuition installment falls due. An additional charge of \$1.00 is made for each additional week after the first week of late registration.

5. The student's first enrollment in the University was as a nonresident. (Ordinarily it is not possible to become a Nebraska resident while attending the University or any other collegiate institution.)

Any student who has been classified as a nonresident who believes he can qualify as a resident should read the statute, which is set forth on the residency form (obtainable from the Registrar's Office at the College of Medicine), fill out the form, and send or take it to the Director of Admissions, Administration Building 110 in Lincoln. A residency application form must be filed with him *before the end of the ninth week* of the term for which the tuition fee was charged. For the summer session, the deadline is the *end of the third week*.

Microscopes.—Students are required to provide suitable microscopes for their own use. Inquiries regarding specifications for microscopes as recommended by the faculty should be addressed to the Assistant Registrar, College of Medicine.

SCHOOL OF NURSING



The School of Nursing, which is a part of the College of Medicine, affords four years of professional education. The immediate administration of the School of Nursing is provided through the Dean and the faculty.

Students may complete the prerequisites of the freshman year at any accredited college or university. Students transfer to the School of Nursing at the beginning of the summer session following their freshman year. The program of instruction for the remaining three years is provided by faculty of the School of Nursing, the College of Medicine, and the University of Nebraska at Omaha. The program leads to a Bachelor of Science in Nursing.

The School of Nursing Building on the College of Medicine campus provides residence and educational facilities for the student nurses. Requests for bulletins and application blanks should be made to the Dean, School of Nursing.

GRADUATE WORK



Graduate course work in the field of the Medical Sciences is offered in thirteen departments: Anatomy, Biochemistry, Internal Medicine, Microbiology, Obstetrics and Gynecology, Otorhinolaryngology, Pathology, Pediatrics, Pharmacology, Physiology, Psychiatry, Radiology and Surgery. Four of these departments (Anatomy, Biochemistry, Microbiology, Physiology) offer independent majors leading to the master's degree or to the Ph.D. degree. Three additional departments (Pathology, Psychiatry, and Radiology) offer independent majors leading to the master's degree only. The thirteen departments also cooperate in offering an interdepartmental area program which permits the student to pursue a course of study for the master's or the Ph.D. degree with concentration in the medical sciences rather than in a specific department.

The requirements for admission to an independent department are as follows: An applicant for admission for work leading to an advanced degree with specialization in a department of the pre-clinical medical sciences (Anatomy, Biochemistry, Microbiology, Pathology, Physiology and Radiology) must comply with the rules governing admission to the Graduate College, and also with any specialized rules governing admission for study in the department in which he expects to major. In general the applicant will, therefore, need to present a Bachelor of Science or a

Bachelor of Arts degree from a recognized college or university including undergraduate preparation constituting an acceptable major in the department in which he expects to carry his work.

Admission to graduate work in the Interdepartmental Area of Medical Sciences, leading to the Master of Science or Doctor of Philosophy degrees, may be granted to students from either of the following categories:

1. Students with a baccalaureate degree from a recognized college or university, including a pre-medical background appropriate to the planned program in the Medical Sciences Area.

Students entering the Medical Sciences program on this basis will be required to have already completed, or to include in their graduate programs, regular medical college course material in at least three of the following subjects: (1) anatomy, (2) biochemistry, (3) physiology, (4) microbiology, (5) pathology, (6) pharmacology, and (7) radiology. Such subjects are to be recorded upon admission to candidacy and included in the comprehensive examination.

2. Students with a degree of Doctor of Medicine with an acceptable record. Students with an M.D. degree will not be permitted to receive graduate college credit for repetition of a course covered in the M.D. program.

For admission for work in the Department of Psychiatry, leading to the degree of Master in Psychiatric Nursing, a student must have completed an approved professional program in nursing with a bachelor's degree from a recognized college or university. As a prerequisite to admission for work leading to the degree of Master in Psychiatric Occupational Therapy, a student must have been graduated from an accredited school of occupational therapy and hold a bachelor's degree from a school or college of recognized standing. For either degree program acceptable evidence will also need to be submitted on the student's personal qualifications for psychiatric nursing or for psychiatric occupational therapy, respectively.

A student registering for graduate work in the medical sciences must comply with the general requirements of the Graduate College and with any special rules established by the graduate committee of his major department, or if the major is in medical sciences, by the interdepartmental area committee. Certain special rules which are applicable to all students in the medical sciences regardless of the major are set forth in the paragraphs which follow. Other rules which pertain to the work in specific departments or in the interdepartmental area are indicated under the headings designating the respective departments.

Graduate students who are admitted with deficiencies in the medical sciences may, by permission of the appropriate graduate or area committee and approval of the Dean of the Medical College, register for courses on the College of Medicine campus in preparation for their qualifying examinations. Such graduate students may, upon the passing of qualifying examinations, make application to the appropriate graduate or area committee for graduate credit in certain medical courses successfully completed. The graduate or area committee may make recommendation for such credit on the basis of the attainment and aptitude of the applicant. In any case, at least one-half of the total credit for the master's degree shall be taken in graduate courses listed as 350 and above. Medical courses for which partial or total graduate credit may be allowed are listed under the respective departmental headings in the sections which follow.

Graduate students may be required to attain proficiency in their field of concentration by participating in the instruction of medical students for at least one quarter in a regularly required course in the College of Medicine. A student who fails to earn an average grade of at least B may not continue his program of study without the special permission of the appropriate graduate or area committee.

A student who wishes to become a candidate for an advanced degree with concentration in the medical sciences must select work in the departments which have been approved to offer graduate work. He may elect to do his thesis research in any one of the thirteen cooperating departments. The distribution of graduate work shall be such that not more than two-thirds of the total program, including thesis research, shall be in the major field of study, with a remainder in at least one other department for candidates for the master's degree, and two other departments for candidates for the degree of Doctor of Philosophy.

Candidates who select one of the preclinical departments for their thesis research may come from any of the two categories (for admission) listed on page 32. They may select other departments for additional work.

Candidates who select one of the clinical departments for their thesis research must select preclinical departments for additional work. Such students may be required to serve as residents for one year before being admitted to the Graduate College. While fulfilling their minor (preclinical) requirements, these candidates must be assigned to the minor department or departments during at least one-third of the total hour requirement for the degree sought.

GRADUATE FEES



All students who are legal residents of the State of Nebraska will pay \$12.00 per quarter hour up to a maximum of \$144.00 (12 hours). Non-resident students will pay \$26.00 per quarter hour up to a maximum of \$312.00 (12 hours). There is no additional charge for over 12 hours per quarter. The single fee includes—in addition to course charges—registration, library, diploma, and Student Health fees. For additional miscellaneous fees, consult the Bulletin of the Graduate College.

A change-of-registration fee of \$5.00 is charged in addition to the regular tuition for any changes made from the original registration.

For thesis publication and binding fees, consult the Librarian of the College of Medicine before starting thesis.

Teaching and Research Assistantships.—A graduate student is required to pay resident tuition and fees for any quarter during which he holds an appointment as a teaching or research assistant. If the stipend received by an assistant for three quarters is equal to at least the maximum fee for four quarters (\$1,248.00) he will pay only the required special fee for a summer quarter following, or intervening between, quarters for which he is appointed, even though he does not hold an appointment for the summer quarter.

Graduate Fellowships.—A student must carry a full program of graduate study or research for each quarter during which the fellowship stipend is received.

GRADUATE REGISTRATION



Registration will be accomplished during the early part of each quarter in consultation with the chairmen of the different departments in which the graduate work will be carried on.

UNIVERSITY STAFF EXEMPTION ◇ ◇

Members of the academic-administrative staff employed full time may be permitted to register for not more than 6 credit hours per quarter in not more than two courses, for which the charge is \$1 plus a \$5 matriculation fee. All such registrations must carry the signed approval of the chairman of the department and the dean or director of the college, school, or division in which the staff member is employed during the period for which he is registered.

Academic-administrative staff members of the University employed by the Nebraska Psychiatric Institute are eligible for this staff exemption.

CONTINUING EDUCATION ◇ ◇

Continuing education is offered through a variety of approaches to practicing physicians, nurses, and ancillary medical groups. Approximately twenty on-campus courses, provided as a cooperative project by the College of Medicine and the University Extension Division, are given each year. On campus education of an intensive nature is available to practitioners in certain aspects of medicine through participation in hospital work and an organized plan of study. Continuing education is brought to health workers in their own hospitals through a program of two-way amplified telephone conferences involving the College of Medicine Hospital and participating hospitals. Through the inward WATS plan, tape recordings on medical diagnosis and current therapy are available by telephone to physicians of the state. The College of Medicine participates in the continuing education activities of the Nebraska-South Dakota Regional Medical Program.

FELLOWSHIPS AND GRADUATE ASSISTANTSHIPS ◇ ◇

Fellowships are available to students who qualify for graduate study and research in the medical sciences. There are also part-time medical student fellowships from several sources including federal agencies, industry, and national as well as local health associations. These are designed to provide summer or part-time employment which includes research experience. Application for full fellowships should be made to the chairman of the department in which the student wishes to work. Application for summer fellowships should be made to the Chairman of the Committee on Scholarships and Awards. Graduate assistantships are available to students of exceptional ability to give them opportunity to do research in the medical sciences and fulfill the requirements for a Master of Science or Doctor of Philosophy degree.

SCHOLARSHIPS ◇ ◇

Alpha Kappa Kappa Alumni Association Scholarship.—An annual grant of \$200 is awarded to a scholastically worthy and deserving student who is recommended by the Dean and approved by the Loan Committee of the Nebraska Medical Education Fund.

The George E. Lewis, Sr., Fund.—Through the generosity of Dr. George E. Lewis, Jr., funds for one or more scholarships for freshman or sophomore students are made available as a memorial to his father. These scholarships are awarded by a committee composed of the Dean and four appointees. Application should be made to the Dean.

The University of Nebraska Upperclass Regents Scholarships.—A limited number of scholarships are made available annually by the Board of

Regents to be awarded to sophomore, junior, and senior medical students on the basis of high scholarship. Application should be directed to the Dean.

Donald Walters Miller Scholarship.—Upon recommendation of the Dean, a medical or graduate student may compete for one of three or four \$1000 scholarships made available annually by Mrs. Donald Walters Miller of Lincoln. These are awarded to students throughout the University on the basis of scholastic ability, educational and professional objectives, character, temperament, and financial need. A special University committee makes the award each spring.

Nu Sigma Nu Alumni Association Scholarship.—An annual grant of \$100 is awarded to a deserving student who is recommended by the Dean and approved by the Loan Committee of the Nebraska Medical Education Fund.

The following scholarships and fellowships are awarded on the basis of recommendation to the Dean by the Medical College Committee on Scholarships and Awards:

Jetur Riggs Conkling and Jennie Hanscom Conkling Foundation.—The will of the late Clementine C. Conkling provides for the creation of a trust to be known as the "Jetur Riggs Conkling and Jennie Hanscom Conkling Foundation," the income of which is used by the Regents of the University of Nebraska in providing scholarships for deserving medical students. Scholarships may be awarded only after the close of the students' first year in the Medical College.

August Frederick Jonas Senior Memorial Fund.—This fund was established by Mrs. A. F. Jonas of Omaha to provide assistance for needy students who are judged worthy on the basis of scholastic attainment, character and promise.

Faculty Woman's Club Scholarship.—An award of \$150 is made annually to the most worthy woman medical student finishing the first year.

Pfizer Laboratories Medical Scholarship.—For several years a scholarship has been made available annually to a particularly deserving student.

Dr. Ernest Tibbetts Manning Memorial.—The award is to be given to an undergraduate who has declared the intention to specialize in the field of public health, pathology, or preventive medicine, who has completed the freshman and sophomore years with a proper degree of excellence, who shows promise of future success, and is in need of financial assistance.

University of Nebraska College of Medicine Alumni Association Scholarships.—The Alumni Association of the College of Medicine makes available three tuition scholarships to be awarded to outstanding members of each entering class.

Dr. H. Winnett Orr Memorial Fund.—The income accruing to this fund is used in support of scholarships designed to aid in the payment of tuition for a freshman medical student. The recipients of the scholarship must have completed their premedic courses at the University of Nebraska and shown outstanding scholastic ability. They must show promise of success in their chosen field and be in need of financial assistance.

Health Professions Scholarship Program.—The purpose of these scholarships is to enable talented students from low-income families to undertake the course of study required to become physicians, dentists, optometrists, pharmacists, or podiatrists. These scholarships are available only

to students who, without this financial assistance, would not be able to pursue the required studies. Before making a scholarship award the school must assess the financial resources which are available to the students. The maximum amount of the grant may not exceed \$2,500 for each academic year.

New York Life Scholarship.—The University of Nebraska College of Medicine is one of eleven four-year medical schools selected under a new program established and financed by the New York Life Insurance Company. The primary purpose is to assist young men and women of ability who would otherwise have serious financial problems attending a medical school. Started in the fall of 1966, each of the participating medical schools selects a qualified candidate in the incoming first-year class as the New York Life Medical Scholar. For renewal, the scholarship student's performance is reviewed by his medical school. The student is expected to rank in the upper one-half of his class. The amount of each annual scholarship is intended to cover tuition, room, board, fees, books, and equipment as stated in a budget of these items submitted by the Dean for approval before each academic year. Only citizens of the United States or Canada are eligible for the scholarship.

Selection is solely the responsibility of the medical schools. Inquiries should be addressed to the chairman of the Scholarship Committee who will present names of applicants to the Dean.

National Medical—Sloan Foundation Scholarships.—Ten four-year medical scholarships were established in 1965 by National Medical Fellowships, Inc. and the Alfred P. Sloan Foundation. To qualify, a student must have demonstrated outstanding achievement in college, been accepted for admission by a medical school, and be a United States citizen. The scholarships, which average \$5,000 for the four-year period of study, are limited to male Negro students. Inquiries should be addressed to the National Medical Fellowships, Inc., 951 East Fifty-Eighth Street, Chicago, Illinois 60637.

LOANS



There are a number of funds available to the University of Nebraska College of Medicine from which money can be lent to deserving students who are in need of financial assistance. Generally they are reserved for students who have established themselves as able and worthy during the completion of at least the first year in medical school.

Applications for loans from any of these funds should be made to the Student Assistance Committee on forms which are available in the Registrar's office.

Ordinarily the Student Assistance Committee will accept applications during a period ending about one month before the dates on which payment of tuition is required. The exact dates will be posted at the College well in advance. Students who foresee the need of financial assistance should have submitted applications by these dates. Except under extreme and unusual emergencies, applications which fail to meet the deadline will be held for review until the next posted date.

Health Professions Student Loan Program.—Funds are provided on a matching basis by the University of Nebraska and the federal government. The program allows a student to borrow a maximum of \$2,500 per academic year. Awards are made on the basis of financial need. Students do not begin repayment of their loans until one year after they cease

to be full-time students. Application should be made to the University of Nebraska Scholarships and Financial Aids Office, 113 Administration Building, Lincoln. The filing deadline is March 1 prior to the academic year in which the loan is desired.

The College of Medicine Alumni Association Student Loan and Scholarship Fund.—On July 15, 1958, a fund was established by the University of Nebraska College of Medicine Alumni Association and placed in the custody of the University of Nebraska Foundation to provide loans or scholarships to students registered or accepted for admission in the College of Medicine. Applications for loans on this fund are received by the Student Assistance Committee.

Students enrolled in the College of Medicine may also receive loans through the Nebraska Medical Foundation and the Nebraska Medical Education Fund, Inc. The Student Assistance Committee can supply information on either of these sources.

The Josephine Chamberlin Loan Fund.—On the retirement of Miss Josephine Chamberlin as Superintendent of the University of Nebraska Dispensary on June 11, 1946, a fund was established in her honor. Loans from this fund are available to students of the College of Medicine and the School of Nursing.

The Faculty Woman's Club of the University of Nebraska College of Medicine Student Loan Fund.—This fund was established in 1956. Money is assigned to it from operation of the students exchange shop. The fund is administered by the University of Nebraska Foundation under conditions which apply to loans from other funds.

Kellogg Fund.—In April, 1942, the W. K. Kellogg Foundation of Battle Creek, Michigan, gave the College of Medicine \$10,000 to be used as a student loan fund, particularly to meet the emergency created by the accelerated war schedule and the consequent loss of student earnings during the summer. An additional grant of \$5,000 was made later in the year.

Omaha Medical College Foundation.—This foundation, created in April, 1921, was established largely through contributions received from former professors in the Omaha Medical College. The object of the foundation is to promote the study of medicine and to provide for medical research in the University of Nebraska College of Medicine and to assist worthy students with loans.

Lizzie Oltmans and Frederick Oltmans Student Loan Fund.—In March, 1950, the donors named above gave \$1,000 to the University of Nebraska Foundation to be used as a loan fund for undergraduate and graduate students enrolled in the College of Medicine.

Robert H. Storz Student Loan Fund.—This fund was established by Storz Brewing Company in 1952 with a sum of \$1,500 to be paid to the University of Nebraska annually. The fund was established to provide loans to students in the College of Medicine who are in need of assistance.

Dr. Carl P. Wagner Memorial Medical Student Loan Fund.—The sum of \$500 was given to the University of Nebraska Foundation in 1952. This fund was established to provide loans to students in the College of Medicine adjudged to be worthy and in need of assistance.

Dr. and Mrs. J. D. Thomas Medical Student Loan Fund.—This fund is available for loans to students who are in good standing and who are native born Nebraskans. Application blanks are obtained from the Reg-

istrar and must be signed by the Dean of the College of Medicine, the Chancellor of the University and the President of the Nebraska State Medical Association.

Scottish Rite Loan Fund.—A fund has been established with the University of Nebraska Foundation from which needy medical students may borrow up to \$600 per academic year. Application should be made through the Student Assistance Committee.

Nebraska Medical Education Fund, Inc.—A group of local physicians and alumni of the University of Nebraska College of Medicine has established a fund to assist medical students, nursing students, interns, and residents. Students in need of assistance may borrow up to \$1,500 per academic year from this fund. Application should be made to the Student Assistance Committee at the College of Medicine.

The American Medical Association Education and Research Foundation (AMA-ERF) program permits qualified students to borrow a maximum of \$1500 per year at essentially prime interest. The Foundation acts as guarantor for borrowers from this source. Applications are available in the Registrar's Office.

The Nebraska State Medical Association has invested funds in a loan program. This program is known as the Nebraska Medical Foundation. This, like the above, is a loan guarantee program which makes loans which may total not more than \$1,500 during a twelve month period. Applications are available in the Registrar's office. Completed forms must be approved by the Dean or his designee.

AWARD



University of Nebraska College of Medicine Alumni Association Award.—Two awards of \$50 are given each year to the senior students presenting the best theses as judged by the Thesis Committee.

STUDENT AND ALUMNI ORGANIZATIONS



Student Activities Council.—The Student Activities Council governs the organization and regulation of student activities of the College of Medicine and School of Nursing. It serves as an agency through which faculty relationships with student activity can be fostered and maintained. Recognized student groups elect members who serve as representatives in the Student Activities Council.

Alumni Association.—Alumni of the University of Nebraska College of Medicine maintain an active organization with headquarters in Omaha, at the college. Activities include sponsorship of class reunions, luncheons, dinners and the traditional senior reception following Commencement each year. A news bulletin is sent to members every two months.

The alumni of the Medical College offer two prizes of \$50 each for the senior theses of the year judged best by the Thesis Committee.

Alpha Omega Alpha.—A.O.A. is a nonsecret medical college honorary society, membership in which is based upon scholarship and moral qualifications.

Elections are limited to those whose scholastic record places them in the upper 25 per cent of their class, but the total number of members shall not exceed one-sixth of the total number expected to graduate. Not more than one-third of the membership may be elected during the

junior year. Juniors must be elected by a unanimous vote, seniors by a majority vote. The University of Nebraska Chapter was organized November 2, 1914.

Student American Medical Association.—Founded in 1950 with the aid of a grant from the AMA, the Student American Medical Association swiftly grew to its present membership of over twenty thousand students, representing more than seventy medical schools. Serving expressly "to advance the profession of medicine, to contribute to the welfare and education of medical students, to familiarize its members with the purposes and ideals of organized medicine, and to prepare its members to meet the social, moral, and ethical obligations of the medical profession," SAMA offers group insurance plans, an internship evaluation program, and a monthly journal. Plans for the immediate future include low-interest student loans, new scholarships, and a job placement service.

At Nebraska, among other functions, SAMA jointly sponsors "Pre-Med Day" and a series of convocations held regularly throughout the school year. Membership closely approaches 100 per cent of the student body.

CLINICAL FACILITIES



University Hospital.—The University Hospital is the central and largest unit of the group of buildings comprising the College of Medicine. University Hospital has 280 beds. In addition, the Medical Center contains 95 beds at the Nebraska Psychiatric Institute and 44 beds at the Hattie B. Munroe Pavilion. Additional teaching beds are provided at affiliated hospitals (see below). Medical and surgical patients are admitted from all outstate counties on referral from physicians, while obstetric, gynecologic, pediatric, and psychiatric patients are accepted from Omaha and Douglas County, as well as outstate.

The main Hospital entrance faces 44th Street. Hospital administrative offices are on level four on the 42nd Street side of the building.

The control of the University Hospital is vested in the Board of Regents of the University and exercised through the President of the Medical Center.

OUTPATIENT FACILITIES



Separate outpatient clinics are located primarily in the north wing of the University Hospital building for general medicine and its subspecialties, general surgery and its subspecialties, general pediatrics and its subspecialties, obstetrics and gynecology and its subspecialties, ophthalmology, otolaryngology, physical medicine and rehabilitation, nuclear medicine, and human genetics. Psychiatry clinics are conducted at the Nebraska Psychiatric Institute. The wide diversity of disease processes and preventive care provides many teaching opportunities for students under supervision of the clinical staff.

AFFILIATED HOSPITALS



Bishop Clarkson Memorial, Immanuel, Methodist, Douglas County, and Veterans Administration hospitals in Omaha, Nebraska, provide over 1,600 additional beds which are available for student education. Members of the College of Medicine faculty are on the staffs of all these hospitals.

POSTGRADUATE PROGRAMS



Graduates of the College of Medicine are afforded a wide selection of internships in the University and affiliated hospitals, as well as in other

states. Twenty-two internships, rotation and straight, as well as 28 first-year residency positions (over 102 residencies in total), are available during the 1969-70 school year at University Hospital and at Nebraska Psychiatric Institute.

LABORATORY FACILITIES



Anatomy.—Beginning with the academic year 1969-1970 the Department of Anatomy will occupy space in the lower two levels of the Basic Science Building. This will provide entirely new laboratory facilities and modern updated materials and instructional aids.

Biochemistry.—This department is located in South Building and occupies levels two and three, which have been completely renovated recently into modern air-conditioned laboratories and offices. Level two is devoted primarily to a student laboratory and supporting facilities for medical biochemistry. The student laboratory can accommodate over 100 students and is subdivided into five independent sections, an arrangement which avoids the turmoil of the large laboratory and allows for small-group teaching and a research-oriented laboratory curriculum.

Level three houses offices, research laboratories, and supporting facilities for faculty. Each faculty member occupies an office-laboratory suite. Additional research laboratories for graduate and special students are available, together with laboratories for studies with radioisotopes and other special instrumentation. Supporting facilities include a cold room, walk-in incubator, darkrooms, glass-washing facility, storage areas, and library-conference room. The department possesses all of the modern tools for biochemical research and pursues an active research program.

Animal research quarters for the department are located in the penthouse of South Building and in the nearby Memorial Research Laboratory building.

Medical Microbiology.—This department occupies space on the second, third, and fourth levels of the new Basic Science Building and shares student laboratory facilities with the Departments of Anatomy and Pathology. There are excellent facilities for support of the teaching exercises and for support of the active research and graduate programs carried out by the faculty of the department. The diagnostic microbiology laboratory is located in the University of Nebraska hospital and clinics. This laboratory provides material useful in class teaching exercises. Extensive collections of slides, specimens, charts, cultures, and other educational material is available.

Pathology.—The offices and classroom areas will be located on the first and second floors of the new Basic Science Building. The student laboratories are also utilized by Microbiology and Anatomy. Special equipment, loan sets of slides and other materials, with the exception of microscopes, are provided for the student by the department. Approximately 9,000 colored lantern slides and numerous electron microscopy photographs are used for the teaching exercises. The laboratories of the Department of Pathology in the University Hospital provide additional materials and case findings which support the teaching program.

Pharmacology.—New construction of basic science space should make it possible to locate this department in enlarged quarters in the future. At present, teaching facilities are shared with the Department of Physiology on the fourth level of the South Laboratory Building. Research

laboratories for staff and graduate students, located on the fourth and fifth levels, are equipped with modern analytical and recording instruments.

Physiology.—The department occupies the fourth, fifth, and sixth levels of the South Laboratory Building. The teaching area for courses in medical physiology and biophysics is located on the fourth level. A lecture and demonstration amphitheater, with sound projection, seats a class of 108. A mammalian laboratory accommodates up to fifty students with surgical tables and recording equipment for eight to ten groups. A second laboratory provides space for an equal number of students to work in pairs on small animals and on tissues and organs *in vitro* as well as to make measurements on human subjects. Until new construction is completed, these teaching facilities are shared with the Department of Pharmacology. A biophysics laboratory accommodates up to twenty-five students for procedures and demonstrations involving electronic, optical, and acoustic apparatus. Research laboratories for staff and graduate students are available on all three floors. Supporting facilities include animal quarters, a surgical suite with sterilization equipment, cold room, photographic dark rooms, radio-isotope laboratory, departmental library-seminar room, and a shop equipped to fabricate in wood, plastic, metal, and glass. The research area is wired to the computer center for direct experimental data processing and experimental control.

Museum.—The pathological museum of the College of Medicine contains about 3,500 specimens. Nearly every variety of pathological lesion is represented and the constant addition of fresh material from the autopsies performed continually adds to its interest. In addition to the gross specimens are thousands of microscopic sections and a large collection of wax reproductions of various lesions. The museum is an important and necessary adjunct to the teaching of pathology and of clinical medicine.

Clinical Pathology.—Classes in clinical pathology will be held in the new Basic Science Building, utilizing the same student laboratory facilities as those used by Microbiology, General Pathology, and Anatomy. A comprehensive hematology loan set is issued to each pair of students for their study throughout the course. Adequate additional collections of materials including photomicrographs and other laboratory equipment are provided for the students, with the exception of microscopes. Demonstration materials are available in the student laboratory and in the University Hospital Laboratories. Teaching material is made available for the students from the University Hospital Clinical Laboratories.

LIBRARY FACILITIES



The college library is located in the Hospital building within easy access of the various laboratories and stands as a vital common interest to the laboratory and clinical branches of medical instruction. The reading room, seating 80, furnishes a congenial place for students, faculty, and staff to work. Half of the 1,500 current journals received are shelved in this room. The book stacks are directly below on two levels and contain 150,000 bound volumes, theses, and monographs. This collection is the result of purchases and acquisitions extending over more than half a century, building up complete files of important journals in the fields of clinical medicine and the basic sciences in English and foreign languages as well. Here the student has access to one of the most complete medical

libraries in the Midwest. It offers abundant opportunities for research and additional reading and study. First year and third year students are given instruction in the use of the library, including an introduction to all the important medical reference tools and indexes.

Incident to its ordinary function, the library maintains a collection of material on the history of medicine in Nebraska, graduates of the College, activities of its staff, and keeps a complete file of reprints of the writings of staff members. Incorporated within the library of the College of Medicine are 2,000 volumes of the Omaha-Douglas County Medical Society, periodicals and transactions of the Nebraska State Medical Association, and several outstanding private medical libraries of former practitioners of the state.

The resources of the University of Nebraska Libraries in Lincoln are available to students and faculty in Omaha, putting an additional three-quarters of a million volumes at their disposal. Through close cooperation with other medical libraries it is possible for the Librarian to secure inter-library loan material from other libraries, including the Center for Research Libraries in Chicago and the National Library of Medicine in Bethesda, Maryland.

A new medical library building is now under construction. When completed it will house a collection of 283,000 volumes on three levels and have study facilities for over 300 readers. The new building is designed to include the most sophisticated techniques of biomedical information storage retrieval and dissemination.

CURRICULUM 1969-1970

The curriculum of the University of Nebraska College of Medicine is undergoing adjustments in emphasis, focus, and distribution of time devoted to the areas involved in medical sciences. Some coordinated inter-departmental courses have been introduced and others are being developed for incorporation by 1970. Alterations in the curriculum are designed to serve the varied interests and professional goals of students. Course units are being shifted from a clock-hour credit system to a quarter-hour credit system so that, rather than summarizing the commitments to departments in terms of credit units, the organization of the curriculum for 1969-1970 is displayed in the following outline:

YEAR I

ANATOMY—including subcell, cell, organ, and gross anatomy; embryology, and neuro-anatomy.

BIOCHEMISTRY—including cell, organ, and system biochemistry.

PHYSIOLOGY—including cell physiology and biophysics.

PSYCHIATRY—a unit in behavioral science and personality development; patterns of response to emotional stimuli, and adjustments with clinical applications.

PREVENTIVE MEDICINE—the accident problem, principles of emergency medical care, and self-care.

CLINICAL CORRELATION—conferences weekly in which approaches to diagnosis and management of disease are correlated with basic sciences.

OBSTETRICS-GYNECOLOGY—supervises a program in which students participate in the total care of a pregnant woman from the initiation of prenatal care to delivery.

YEAR II

PHYSIOLOGY—organ and system physiology plus physiology of special senses.

MICROBIOLOGY—fundamentals of bacteriology, medical microbiology, and immunology, coordinated with pathology.

PATHOLOGY—cell, organ, and system pathology involving anatomic and morphologic changes produced by disease. Laboratory medicine demonstrates and applies standard laboratory procedures to normal and disease states.

PHARMACOLOGY—a molecular, cellular, and system approach to pharmacologic agents.

OBSTETRICS-GYNECOLOGY AND PEDIATRICS—a coordinated course in reproduction biology and growth and development.

PSYCHIATRY—technics of interviewing patients and a consideration of the background, consequences, and approach to management of mental disease—in conjunction with patients.

PREVENTIVE MEDICINE—biostatistics and principles of epidemiology of diseases.

CLINICAL MEDICINE TECHNICS—history taking and physical examination technics.

RADIOLOGY—background in radiology and application of radiation to diagnosis and treatment.

NEUROSCIENCE—a course relating basic neuroscience to clinical neuroscience.

OPHTHALMOLOGY—diseases of the eye.

CLINICAL CORRELATION—a transition course emphasizing the application of basic sciences to disease processes.

VALUES IN MEDICINE—a lecture-discussion course examining values and religions as they involve the physician and his patient.

YEAR III

PRIMARY HOSPITAL CLERKSHIPS—8 weeks each (32 weeks)

Internal Medicine

Obstetrics-Gynecology

Pediatrics

Surgery

ELECTIVES—16 weeks

VACATION—8 weeks

A required primary clerkship in Psychiatry (8 weeks) and in Neuroscience (4 weeks) can be scheduled during the third or fourth year.

CLINICAL SCIENCE SERIES—A continuous series of lectures and demonstrations organized in subject areas by interdepartmental faculty committees. Designed to provide the background in clinical science deemed basic for every physician irrespective of his career. All traditional clinical departments plus Pathology, Physical Medicine and Rehabilitation, and Radiology participate in this series.

YEAR IV

OUTPATIENT CLERKSHIP, INTERNAL MEDICINE—8 weeks

COMMUNITY PRECEPTORSHIP—4 weeks

ELECTIVES—36 weeks

VACATION—8 weeks

Elective opportunities are offered in 4, 8, and 12 week units by all departments and divisions of the College of Medicine. The student is able to select a program with faculty counsel that most effectively supports his interests and career goals. Practical limits on each elective assure a favorable ratio between students and faculty so that learning will be optimal.

Medical Genetics, Jurisprudence, and Forensic Pathology are whole-class courses.

Courses of Instruction

In the following departments, courses numbered 310-319 are given in the first medical year; courses numbered 320-329, in the second medical year; courses numbered 330-339, in the third medical year; courses numbered 340-349, in the fourth medical year. Courses numbered 350 carry graduate credit. Roman I indicates courses offered the fall quarter; II, the winter quarter; III, the spring quarter; and SS, the summer.

Anatomy

Professors Holyoke, *Chairman*, Hard, *Vice Chairman*, Benjamin, *Emeritus*, Elliott, Friedlander, Latta, *Emeritus*, Skultety; Associate Professors Meader, Rigby; Assistant Professors Bach, Earle, Gardner, Reynolds, Severn, Shervey; Associate Cochran; Instructor Landers; Assistant Rees; Demonstrator Rath.

In this department instruction is given in gross, microscopic, and developmental anatomy including gross and microscopic anatomy of the nervous system. The work of the department extends through the first two quarters of the first medical year.

All instruction is based on laboratory work carried out under the supervision of the staff. Lectures covering subjects of broad morphological significance are given before the entire class, but for the discussion of details, in conjunction with laboratory work, the class is subdivided into small groups. Every effort is made to correlate the work in gross and microscopic anatomy. In addition a selection of elective courses is open to students in the third and fourth years.

Anatomy.—

310. Gross Anatomy (I, II)

The course covers the dissection of the entire body. The work is carried out in groups of four to six, each group being assigned to a separate table. The greater part of the instruction is given in the laboratory over the actual specimen on which table demonstrations and quizzes are required from time to time.

311. Histology-Embryology (I, II)

A detailed study of the histology and histogenesis of the fundamental tissues and organ systems is carried out with lectures emphasizing important points and phases which require special explanation. This is followed during the second quarter by a brief review of human morphogenesis and its application to abnormal development and teratology.

312. Neuroanatomy (II)

This course presents a study of the principal sensory and motor systems on a functional and clinical basis. The pathways within the central nervous system are traced through brainstem sections and brain dissections. Clinical case presentations by members of the clinical staff serve to illustrate practical application of the subject material to clinical medicine.

Electives.—

Note. Prerequisite for all elective courses is permission.

330. **The Hypothalamus and Autonomic Nervous System** (2 q h cr III) Earle, Staff
An anatomical and physiological consideration of selected topics dealing with the role of the hypothalamus and autonomic nervous system in homeostasis. Offered during the first 8 weeks—spring quarter.

350. **General and Special Methods in Histological Technique** (3-8 q h cr) Hard, Holyoke, Meader

Prereq Anat 311

Principles and practice in general methods of preparation of tissue for histological study; special training given in the fields of the student's particular interest.

351. **Special Neurohistological and Experimental Neurological Techniques** (3-8 q h cr) Elliott, Hard

Prereq Anat 350

Advanced special technical methods of demonstrating the histological structure of nervous tissue and of the experimental approaches to neurological problems.

352. **Morphological Histochemistry** (4 q h cr III) Shervey

Development of basic concepts and methods for the identification of lipids, carbohydrates, proteins, enzymes, and inorganic compounds in tissue sections.

353. **Morphological and Experimental Hematology** (4-9 q h cr) Meader, Rigby

Prereq Anat 350

Detailed study of the morphology and interrelationships between the cells of the blood, blood-forming organs and the connective tissues. Experimental studies of the biological significance of the cellular elements of the blood.

- 354. Comparative and Human Embryology** (4-9 q h cr) Hard, Holyoke, Meader
Prereq Anat 350
 Special advanced studies of various features of reproduction and development as illustrated in the departmental embryological collection.
- 355. Experimental Embryology** (4-9 q h cr) Holyoke
Prereq Anat 350
 Advanced study and training in the methods employed in analysis of the factors and potentials operative in mammalian development processes.
- 356. Advanced Human and Comparative Neuroanatomy and Neurohistology** (4-9 q h cr) Elliott, Hard, Skultety
Prereq Anat 350
 Advanced detailed study of the structural organization of the central and peripheral nervous system of man and/or various laboratory animals.
- 357. Morphological Endocrinology** (4-9 q h cr) Meader
Prereq Anat 350
 Advanced study of histological features of the various endocrine glands and morphological effects of endocrine substances on various target organs.
- 361. Advanced Gross Anatomy** (Surgery 361) (3-10 q h cr) Bach, Holyoke, Meader
Prereq Anat 310, 311, 312
 Studies of general and special gross dissection of the human body.
- 362. Techniques of Electron Microscopy** (5 q h cr) Meader
Prereq Anat 311
 Instruction in the general theory, and practice in the operation, of the electron microscope, including special methods involved in the fixation, embedding, sectioning, and mounting of specimens.
- 363. Selected Problems in Electron Microscopy** (5-10 q h cr) Holyoke, Meader
Prereq Anat 362
 Special problems will be selected involving the ultrastructure of organelles within cells, of plasma membranes, interrelationships between cells or the characteristics of intercellular substances as revealed by the electron microscope.
- 364. Advanced Neuroanatomy and Neurophysiology** (3-9 q h cr) Skultety
Prereq Permission of the instructor
 An advanced and detailed study of the anatomy and physiology of the human central nervous system.
- 365. Vertebrate Cytogenetics** (4 q h cr III) Hard
 A review of the medical aspects of cytogenetics. Given during the first 4 weeks—spring quarter. (This is one section of a more extensive graduate course—365).
- 366. Molecular and Cellular Aspects of Development** (3 q h cr) Severn
Prereq Permission of instructor
 A study of the cell, its organelles and specific products and their role in developmental biology.
- 367. Topographical Anatomy** (4 q h cr) Holyoke, Severn
 A study of the structural relationships of the human body as viewed from serial sections in horizontal and sagittal planes. Given by arrangement and upon sufficient demand.
- 368. Teratology** (2 q h cr III) Severn, Staff
 A study of potential or known causes of congenital malformations: their deviation from normal development; their frequency and distribution and their management. Given during the second 4 weeks—spring quarter.
- 360. Seminar** (1 q h cr per q I, II, III) Staff
- 369. History of Anatomy** (1 q h cr) Staff
Prereq Permission of instructor
 A series of twelve lectures or seminars on various phases of the history of anatomy as a science.
- 398. Master's Thesis** (9-15 q h cr)
- 399. Doctoral Thesis** (cr arr)

In addition to the above the department offers graduate courses which are not listed as medical college electives. The student interested in graduate college registration will find these courses listed in the Graduate College Bulletin.

Biochemistry

Professors Ruegamer, *Chairman*, Carver, Harman, Jacobi, Lambooy, Lijinsky, Ryan; Associate Professors H. Davis, Goldsmith, Mahowald, Mehlman, Wilder; Assistant Professors Barak, Barker, Charnock, Copenhaver, Faulkner, Hofert, Keefer; Instructor Lee.

The basic course in Biochemistry (Biochemistry 310) is intended to acquaint both medical and graduate students with the basic concepts and facts of the science. In addition to the broad aspects of metabolism, biochemical aberrations in disease states are introduced to aid in the understanding of normal reactions and mechanisms.

The instruction offered in this basic course is supplemented with more advanced and specialized courses which are offered to candidates for the M.S. and Ph.D. degrees and to medical and other special students desiring advanced training in medical biochemistry.

- 310. Medical Biochemistry (II, III) (14 q h cr for graduate work except for those completing a graduate major in biochemistry) Staff**

The descriptive and dynamic aspects of biochemistry with special reference to the human are presented. Appropriate physical chemical principles are reviewed and applied to understanding normal physiological processes and their derangements in disease. Lipids, carbohydrates, and proteins are discussed from the standpoint of their descriptive chemistry, digestion, absorption, intermediary metabolism, and relationship to over-all cellular metabolism. The second half of the course is concerned with special tissue and organ metabolism, molecular genetics, acid-base balance, the principles of nutrition, and the basic concepts of endocrine metabolism. During the first quarter various chemical, physical, and instrumental techniques are demonstrated in the laboratory. In the second quarter, the class is subdivided into small groups of students who elect to pursue a research or library project or to participate in one of several colloquia that are offered. Such a program permits the student to select an area for advanced study that is suited to his interests and background.

- 340. Clinical Biochemistry (III) Harman**

Although this course deals with clinical problems, it is presented against a background of basic biochemistry. The content varies, depending on topics of current interest as well as on student needs. Such subjects as acid-base balance, water and electrolytic metabolism, protein metabolism and antibiotics have been covered. The biochemical aspects of these topics are emphasized in extensive correlation with clinical material. In this way the biochemistry of clinical medicine is brought into sharp focus.

- 350. Advanced Topics in Biochemistry (5 q h cr per subdivision) Staff**

Prereq Biochem 310

At least one subdivision of this course will be given each fall, winter, and spring quarter. The subdivisions constitute an advanced and comprehensive coverage of modern biochemistry

- A. Enzymes
- B. Intermediary Metabolism
- C. Hormones
- D. Lipids
- E. Carbohydrates
- F. Proteins
- G. Nucleic Acids
- H. Vitamins
- I. Physical Biochemistry
- J. Special Topics (1-5 q h cr)

- 360. Advanced Techniques in Biochemistry (1-8 q h cr per subdivision: maximum number of students—18) Staff**

This course is given periodically and often during the summer quarter. The course permits advanced study of techniques or research in biochemistry other than thesis research.

- A. Instrumental and Physical Techniques
- B. Microbiological and Animal Technique
- C. Radioisotope Techniques

- 370. Seminar in Biochemistry (1 q h cr per q) Staff**

The seminar is designed to cover topics of current biochemical interest to staff and students.

- 398. Master's Thesis (9-15 cr) Staff**

- 399. Doctoral Thesis (cr arr) Staff**

Correlation Courses

- 310. First Year Correlation Course** (31 hrs I, II, III)
Clinical patients and problems are presented by clinical staff members to illustrate the application of basic science course content to medical problems and practice.
- 320. Introduction to Clinical Medicine** (10 hrs III)
An introduction to clinical medicine for sophomores is held weekly, jointly with the Department of Surgery. A member of each department is present and they jointly discuss such subjects as ageing and involution, diseases of medical progress, shock, fever and reaction to injury and stress.
- 340. Genetics** (Total 12 hrs I) Eisen, Staff
Current principles and concepts of medical genetics are discussed on the sub-cellular to the organismal level. Examples of gene and chromosome disorders are presented from both clinical and basic science points of view. Procedures of genetic counseling are emphasized.

Dermatology and Syphilology

Associate Professors Wilhelmj, *Chairman*, Pinne; Instructors Bell, Fredrickson; Clinical Instructor Barthell; Senior Consultant Wilson.

A foundation in dermatology and syphilology is laid by lectures, clinics and demonstrations. At the University Dispensary the students are brought in personal contact with patients whom they observe throughout their entire care under the supervision of the attending physician. A large and carefully selected collection of photographs is available for use.

Dermatology.—

- 330. Fundamentals** (1 hr weekly, total 12 hrs I) Fredrickson, Wilhelmj
Lectures on the skin and its diseases.
- 341. Dispensary** (2 hrs weekly, for 8 wks, total 16 hrs SS, I, II, III)
Weekly 2-hour clinics are held at the University Dispensary.
Fourth-year students are assigned to these clinics for practical experience in the diagnosis of skin diseases and the treatment of syphilis.

Internal Medicine

Professors Grissom, *Chairman*, Beber, Foley, Harman, Lehnhoff, Lemon, Lowenburg, Paustian, Tobin; Associate Professors W. Angle, Brazer, Corliss, R. B. Davis, Greene, Henn, T. Hubbard, Kass, Lim, Long, Loomis, Muffley, Pepper, Pratt, Reiff, Rigby, Ware, Wurl; Assistant Professors Boyett, Bucholz, J. C. Davis, Dickerson, Ecklund, J. Gordon, Graham, C. Hamilton, Hankins, Jackson, Jaros, Joranson, Knott, Langdon, L. R. Lee, R. Lewis, Matoole, Morris, Myers, Nutzman, Nye, Parrillo, Quaife, Root, Rosenlof, Sage, Sticher, Taylor, W. Thomas, R. F. Thompson, J. Thomsen, V. Ward, Wright, Wyrens; Instructors Bacon, Bressman, Dewey, Graves, Haack, Hammes, Harvey, Holcombe, Hopkins, Jensen, J. Lewis, Matthews, Niehaus, Novak, Schellak, Schwid, M. Scott, Sehnert, Simmons, Slabaugh, Stemper, Stryker, Tomhave, Walvoord, A. Weaver, Weeks, Westmore; Assistant Instructors Allely, Bancroft, Bidari, H. Johnson, Retelsdorf, Settles, Zacharia; Research Associate Aftonomos; Research Assistant Loch; Research Assistant Instructor Martinez; Senior Consultants Albertson, Best, Fleishman, Hull, Margolin, Moody, Muskin, Reed; Emeriti Bresnahan, Dunn, Kirk, McCarthy.

Organization: Chairman—Robert L. Grissom; Director of House Staff Program—Frederick Paustian.

Medical Services:

Hospital, University of Nebraska—Chief, Robert L. Grissom
Hospital, Veterans Administration—Chief, Richard Tobin
Hospital, Douglas County—Chief, Robert L. Grissom
Hospital, Bishop Clarkson Memorial—Chief, Fred Ware
Hospital, University Medicine Clinics—Chief, Vernon Ward
Section of Cardiology—Head, Robert L. Grissom
Cardiovascular Catheterization Laboratory—Head, Robert L. Grissom
Section of Endocrinology—Head, Robert Ecklund
Section of Gastroenterology—Head, Frederick Paustian
Division of Hematology—Director, Perry Rigby
Section of Infectious Disease—Head, J. C. Davis, III
Division of Oncology—Head, Henry Lemon
Section of Pulmonology—Head, Irving Kass
Section of Renology—Acting Head, George Loomis

It is the aim of instruction in Internal Medicine to establish a broad understanding of patients with disease and to develop a scholarly approach to the study of medical problems. Intensive study by each student of relatively fewer patients is emphasized rather than superficial observation of many patients. The student studies health as well as disease. Small group conferences (four to six students) are utilized, with each member of the group participating. Time is allowed in each weekly program for reading, research and other independent pursuits for the purpose of establishing habits for self-development which will persist for life.

INTERNAL MEDICINE.—

- 310. Introduction to Medicine** (cr arr)
Interdepartmental orientation.
- 311. Clinical Science Seminar** (cr arr)
Application of scientific knowledge to the patient and his puzzling problem. Interdepartmental orientation.
- 312. Clinical Science Technique** (cr arr)
Introduction to the experience of history taking and the excitement of the careful physical examination. Interdepartmental, using small groups.
- 321. Clinical Science Seminar** (cr arr)
A continuation of 311 from the first year.
- 322. Clinical Science Technic** (cr arr)
This course is coordinated with and a continuation of 312. Further development of skills in history taking and in the performance of the physical examination is the aim. Interdepartmental.
- 330. Junior Medicine** (8 weeks I, II, III, SS)
The student is a part of the team caring for the patient.
- 331. Clinical Science Seminar**
Continuation of 311 and 321.
- 340. Senior Medicine** (8 weeks)
Experience with the ambulatory patient in medicine and subspecialty clinic areas, in the emergency room, and in other outpatient related areas. The Departments of Dermatology, Surgery, Otorhinolaryngology and others cooperate in this effort.
- 341. Clinical Science Seminar**
Continuation of 311, 321, and 331.

INTERNAL MEDICINE ELECTIVES.—

- 342. Inpatient Clerkship** (8 or 4 weeks)
Offered in the senior year for 8 weeks, which is preferred, but also for 4 weeks, as an inpatient general internal medicine experience. It is an advanced sequel to 330 and gives the student greater responsibility. Specific hospitals may be chosen by the student in Omaha or other medical centers, by arrangement with the department. Limit 16.
- 343. Subspecialty Electives** (Max 5 q h cr per 4-week period)
Special part-time basic science offerings can be elected concurrently with the following by arrangement with the staff member listed. If concurrent basic science elective is taken, the credit hours are appropriately reduced.
 - A. Cardiology** (8 or 4 weeks) Grissom, Staff
Eight weeks preferred. A combined offering of Medicine, Surgery, and Pediatrics Departments. Hemodynamics, electrocardiography, phonocardiography, inpatient and outpatient experience. Limit 4.
 - B. Gastroenterology** (8 or 4 weeks) Paustian, Staff
A combined offering of medicine, surgery, pediatrics, and radiology. Inpatient and outpatient experience. Limit 4.
 - C. Hematology** (8 or 4 weeks) Rigby, Staff
A combined offering of medicine, pediatrics, pathology. Inpatient and outpatient experience. Limit 10.
 - D. Oncology** (8 or 4 weeks) Lemon, Staff
Medicine and surgery inpatient and outpatient experience.
 - E. Endocrinology** (8 or 4 weeks) Ecklund, Staff
Eight weeks preferred. Medicine and pediatrics combined inpatient and outpatient service experience. Limit 2.
 - F. Psychosomatic Medicine** (4 or 8 weeks) Ward, Staff
Limit 2.
 - G. Infectious Disease** (arr) Davis, Staff

- H. Pulmonary** (4 weeks) Kass, Staff
Limit 2.
- I. Medical Electronics** (Physiology 370) (5 q h cr, 8 weeks half time I, III)
Haack, Staff
Limit 3-6.
- J. Diabetes** (4 weeks) Meyer, Staff
Limit 2.
- K. Renal** (4 weeks) Loomis, Staff
Limit 2.
- L. Metabolism** (arr) Tobin, Staff
- M. Use of Isotopes in Internal Medicine** Matoole, Novak, Quaife
- N. Advanced Internal Medicine Seminar** Staff
Especially to be considered with basic science part-time electives.
- 349. Research** (cr arr SS, I, II, III)
- 350. The Physiology of Symptoms** (1 q h cr per q—total 3) Grissom
- 351. Problems in Metabolism and Endocrinology** Grissom, Henn, Paustian
 - A. Diabetes Mellitus** (1 q h cr per q—total 3)
 - B. Advanced Endocrinology** (1 q h cr per q—total 3)
 - C. Metabolism and Nutrition** (1 q h cr per q—total 3)
 - D. Rheumatology** (1 q h cr per q—total 3)
- 352. Advanced Gastroenterology and Biliary Diseases** (1 q h cr per q—total 13)
Magnuson, Paustian, Westmore
- 353. Advanced Studies of the Cardiovascular Renal System** Angle, Dunn, Grissom, Hubbard, Loomis, Pepper
 - A. Cardiologic Diagnosis and Electrocardiography** (4 q h cr per q—total 12)
 - B. The Management of Heart Disease** (3 q h cr per q—total 9)
 - C. Hypertension and Nephritis** (3 q h cr per q—total 9)
 - D. Peripheral Vascular Diseases** (1 q h cr per q—total 3)
- 354. Infectious Diseases, Chemotherapy and Antibiotics** (3 q h cr per q—total 9)
Davis, Grissom
- 355. Advanced Allergy** (1 q h cr per q—total 4) Grissom
- 356. Advanced Hematology** (Pathology 365) (1 q h cr per q—total 4) Pratt, Rigby
- 357. Cardiovascular Seminar** (1 q h cr per q)
Prereq IM 330
- 358. Medical Seminar** (1 q h cr per q)
Prereq IM 330
- 398. Master's Thesis** (9-15 q h cr)
- 399. Doctoral Thesis** (cr arr)

Medical Bibliography

Librarian Hetzner; Assistant Librarians Davidoff, Koenig, Williams, Fahey, and Staff.

Lectures and conferences are held to acquaint the student with resources in medical literature and bibliographic methods in medical research.

First year students are given instruction regarding the use of reference and indexing tools and receive practical experience in the application of literature-searching technics. Advanced students may receive instruction and arrange conferences on the bibliography of science and the problems involved in thesis writing.

Medical Ethics

Selected physicians and laymen present pertinent facts and considerations relating to the economics, the organization, the types of practice and the obligations of physicians to patients, to their community and to their fellow physicians.

- 340. Medical Ethics and Professional Relationships** (I, II)

Medical Jurisprudence

Associate Professors Ellick, Chairman, Spire; Instructor J. Langdon.

The course in medical jurisprudence has for its purpose the presentation of medico-legal relationships in order that the student may be familiar with that increasingly pertinent phase of professional life and practice. This course is a comprehensive sur-

vey of the medico-legal field and a detailed analysis and study of that science which applies the principles and practice of medicine to the elucidation and settlement of legal questions which arise in everyday professional practice as well as in courts of law.

340. Medical Jurisprudence (II, III)

Medical legislation, medical evidence and witnesses, privileged communications, general medico-legal relations, physicians' contracts and compensation, income taxes, malpractice, workmen's compensation law, sterilization and liability of hospitals and nurses are some of the subjects discussed.

Medical Microbiology

Professors McFadden, *Chairman*, N. Miller; Associate Professors Dubes, Tremaine, von Riesen, White; Assistant Professors D. Harvey, J. Jones; Instructors Kahle, Parsons.

It is the goal of the faculty of this department to develop with the student a balanced concept of medical microbiology and infectious disease. Endeavor is made to demonstrate the principles of pathogenesis, host parasite relationships, and molecular biology as these affect the field of medical microbiology. As specific goals we consider with the student the effects upon the human host of microbial agents and suggest the manner in which a microbiological diagnosis may be made. This is accomplished by lectures and laboratories which emphasize such host parasite relationships, pathogenesis, and principles of infectious disease. Immunity and associated phenomena are discussed.

The course in Medical Microbiology 320 aims to acquaint students with the basic principles of microbiology, particularly as these relate to infection and disease. The instruction offered in this course is supplemented with more advanced and specialized courses (350 to 399 inclusive), for students who are candidates for the M.S. or Ph.D. degree and for other students such as honors students, residents in specialty training, and others desiring advanced work in medical microbiology independently of the requirements for a degree. For more details concerning the program in graduate education, please see the *Bulletin of the Graduate College of the University of Nebraska*.

Medical Microbiology.—

320. Medical Microbiology (I, II) McFadden and Staff

A lecture, conference, and laboratory course dealing with the cultural characteristics, pathogenic properties, immunological responses, host-parasite relationships, etc., of bacteria, fungi, rickettsias, and viruses in general, with special reference to those of importance in disease. This course also provides a consideration of clinical parasitology and deals with protozoa, helminths, and arthropods of medical importance.

350. Physiology of Microorganisms (4 q h cr) von Riesen

Lect 2 lab 4. *Prereq* MM 320 and one semester organic chemistry (or biochemistry)

A consideration of the chemical composition, structure, growth, and nutrition of microorganisms; the influence of physical and chemical agents; and variation, adaptation, and mutation.

352. Metabolism of Microorganisms (4 q h cr) von Riesen

Lect 2 lab 4. *Prereq* MM 350 and a course in biochemistry or by special permission

A study of enzymes; the metabolism of carbohydrates, proteins, and other substances; and virulence as a physiologic problem.

354. Principles of Immunology (4 q h cr) Tremaine

Lect 3 lab 6. *Prereq* MM 320

Detailed study of the nature of antigens, antibodies, and their interactions. Laboratory work includes preparation of antisera, quantitative immuno-chemical methods, principles of serological tests, and study of *in vivo* allergic reactions.

356. Medical Bacteriology (8 q h cr) Miller, Tremaine, White

Lect 2 lab 4. *Prereq* MM 320

A detailed study of the morphologic, cultural, antigenic and pathogenic characteristics of disease-producing bacteria including techniques of isolation and identification. This course is to be given over a period of two consecutive quarters.

358. Systematic Microbiology (3 q h cr) Tremaine, White

Lect 3. *Prereq* MM 320

Study of the systematic relationships of microorganisms. Classification methods, nomenclature and relationships among bacteria, yeasts, molds, viruses, rickettsias, and protozoa are explored. Three discussions per week.

- 360. Medical Mycology** (4 q h cr) Miller
Lect 2 lab 4. *Prereq* MM 320
A study of the actinomycetes and fungi with particular emphasis on those capable of producing infection.
- 362. Viruses and Rickettsia** (8 q h cr) White
Lect 2 lab 4. *Prereq* MM 320
A detailed study of the morphologic, physiochemical, cultural, and pathogenic characteristics of human and animal viruses and rickettsia with emphasis on methodology and host-parasite relationships. This course is to be given over a period of two consecutive quarters.
- 364. Medical Parasitology and Tropical Medicine** (4 q h cr) McFadden, Smith
Lect 2 lab 4. *Prereq* MM 320
A detailed study of protozoan and helminthic agents of disease including consideration of morphology, biology, life cycles, and host-parasite relationships.
- 370. Diagnostic Microbiology** (3-9 q h cr) McFadden and Staff
By arrangement. *Prereq* MM 320
Specific techniques for isolation identification and sensitivity testing of microorganisms from clinical material available in the diagnostic laboratories of the University of Nebraska Hospital and Clinics. Practical approach with conference and laboratory.
A. Bacteriology
B. Serology
C. Virology
- 372. Microbiology of Foods and Water** (4 q h cr) Miller, von Riesen
Lect 2 lab 4. *Prereq* MM 320
A study of the microorganisms found in and on natural, fermented, and prepared foods, and in water and sewage; spoilage microorganisms; preservation of foods; standard methods for the analysis of foods and water; and the role of foods and water in the transmission of disease agents.
- 374. Diseases of Animals Transmissible to Man** (3 q h cr) McFadden, Miller
Lect 3. *Prereq* MM 320
A study of the epidemiological factors necessary for the transmission of various microbial diseases of animals to man including a discussion of the infecting agents, their vectors if any, their reservoirs and their interrelationships.
- 376. Pathogenesis of Infectious Diseases** (3 q h cr) McFadden
Lect 3. *Prereq* MM 320
Every pathogenic organism has its own unique, biological, and biochemical qualities which make possible invasion, multiplication, infection, and disease within the host. This course is concerned with these host-parasite relationships.
- 380. Antiseptics, Disinfectants, and Chemotherapeutic Agents** (4 q h cr) McFadden, von Riesen
Lect 2 lab 4. *Prereq* MM 320 and MM 350 or by special permission
Theoretical and practical aspects of the influence of physical and chemical agents on microorganisms.
- 382. Advanced Topics in Microbiology** (cr arr) Staff
Prereq MM 320
Advanced study (research other than thesis) in one of the several disciplines of medical microbiology such as bacteriology, immunology, mycology, virology, parasitology, tissue culture, electron microscopy, etc.
- 396. Seminar** (1 q h cr per q) Staff
By permission
- 398. Master's Thesis** (9-15 q h cr) Staff
- 399. Doctoral Thesis** (cr arr) Staff

Neurology

Professors Friedlander, *Chairman*, Levens, Wigton; Associate Professors Aita, Dutch; Assistant Professor Lorenzo; Instructors Garwacki, Pellegrino.

- 321. Structure and Function of the Nervous System and Their Relation to Neurological Disease** (1 hr weekly, total 12 hrs III) Friedlander, Skultety
A review of neuroanatomy and neurophysiology with emphasis on the implications of these fields in the clinical neurosciences. This course is meant to be a bridge between basic neuroanatomy and neurophysiology and the course in clinical neuroscience.

- 331. Clinical Neuroscience** (1 hr weekly, total 22 hrs II, III) Friedlander, Skultety and Staffs
An integrated series of lectures covering the clinical aspects of neurology and neurosurgery.
- 336. Clinical Neuroscience Clerkship** (94 hrs I, II, III) Friedlander, Skultety, and Staffs
Third-year or fourth-year students are assigned to combined neurology and neurosurgical clinical services for periods of 4 weeks. Clinical experience is obtained under close staff supervision.
- 341. Senior Clinical Neurology Clerkship** (SS, I, II, III) Friedlander and Staff
Senior student may elect a period of at least 4 weeks during which additional experience in neurology may be obtained. Clinical experience with both inpatients and outpatients is emphasized but additional exposure to neurosurgery, clinical neurophysiology (EEG and EMG), neuropathology, neuropsychology and/or research may be obtained to fit the individual needs and desires of the clerk.
- 344-I. Senior Clinical Pediatric Neurology Clerkship** (SS, I, II, III) Pelligrino
Senior students may elect a period of at least 4 weeks during which they will have clinical experience in both inpatient and outpatient pediatric neurology. The program can be altered within limits to fit the individual desires of the clerk in regard to related neurosurgery, clinical neurophysiology, and genetics.

Obstetrics and Gynecology

Professors Pearse, *Chairman*, McGoogan; Research Professor W. Ryan; Associate Professors Cotton, Richard Garlinghouse, Olson, Redgwick, Rumbolz; Assistant Professors Gorthy, Jernstrom, Magid, McGinnis, Messer, Roffman, Schack, Joseph Scott, Soule, W. Taylor; Research Assistant Professor Barker; Associates Boelter, Harold Harvey, Kovarik; Instructors Ballew, Cruise, Elston, George, Hansen, Heidrick, Hirst, P. Johnson, Krapohl, K. Lewis, Orr, Sundell, Yost; Research Instructors R. Johnson, Lee; Assistant Instructor McCarthy; Senior Consultants H. Anderson, Luikart, Morgan; Emeriti Harry Harvey, Moon.

The objectives of this department are the integration of reproductive physiology, biochemistry, and anatomy with the normal and abnormal problems of obstetrics and female reproductive tract. Lectures and small group seminars carry this integration through the last four years of medical school. Obstetric cases are assigned under direction to the third year medical class, and extensive practical experience is provided through assignment to the outpatient prenatal and gynecology clinics and to affiliated hospitals.

Undergraduate students are encouraged to participate in research projects, and those with particular interests are given direction and support. A wide variety of advanced courses is available, and students are urged to select a program to meet their future needs.

Obstetrics & Gynecology.—

- 310. Maternal Health Care** (Individual assignment)
Each student is assigned to a pregnant patient whom he follows through prenatal care, delivery, postpartum, and newborn care.
- 320. Introduction to Obstetrics and Gynecology** (I, II)
Anatomy, physiology, and biochemistry of normal human reproduction, and their relation to clinical obstetrics and gynecology.
- 330. Obstetrics and Gynecology** (I, II)
Abnormalities and complications of pregnancy, labor, and the puerperium. Theory, diagnosis, and management of gynecologic disorders. Given third year students as part of correlated lecture series.
- 335. Junior Clinical Clerkship** (8 wks)
Third-year students are assigned to the University Hospital and affiliated hospitals for inpatient experience and to the University Hospital clinics for outpatient obstetric and gynecologic clinics. They will follow the progress of patients in labor, assist and perform deliveries, follow the evaluation and management of gynecologic patients, assist at operative procedures, and maintain a complete record until the patient is discharged from the hospital. Outpatient experience will include participation in the following clinics: normal and complicated obstetric, tumor, gynecologic, endocrine-infertility, and family planning. Seminars, conferences, and ward rounds are scheduled regularly.
- 340. Obstetrics and Gynecology** (II)
Sex counseling, family planning, and the relation of complicated obstetrics-gynecology to other medical disciplines.

- 345-A. Advanced Obstetrics** (5 q h cr per 4 weeks, limit 3) Pearse, Staff
A University Hospital inpatient service at the intern level emphasizing obstetrics. Designed to meet the needs of students who plan active post doctoral obstetrical patient care.
- 345-E. Off-Campus Selectives** (5 q h cr per 4 weeks) Pearse
Clerkships in University or teaching hospitals elsewhere. By individual approval only.
- 345-H. Obstetric Hematology** (5 q h cr per 4 weeks) Messer
Clerkship with emphasis on clinical hematologic problems in pregnancy. Limit 1.
- 345-O. Outpatient** (4 or 8 weeks; 5 q h cr per 4 weeks) Chehab, Staff
Obstetric, gynecologic, and specialty clinic experience including family planning. Daily seminars with the faculty to discuss special problem areas in obstetrics and gynecology including endocrinology. Inpatient service by arrangement at affiliated hospitals. Limit 3.
- 345-T. Obstetrics and Gynecology Tutorial** (5 q h cr per 4 weeks; 4 weeks) Pearse, McGoogan, Luby, Messer, Rumbolz, Jernstrom, Chehab, Orr, Roffman, Scott
Individual students work in a one to one relationship with the full-time staff at the University Hospital or a volunteer faculty member at an affiliated hospital. By approval only. Limit 1-2 students per faculty member per year.
- 345-S. Seminars in Reproduction** (3 q h cr; spring quarter only) Staff
A series of basic seminars on normal and abnormal obstetrics and gynecology. Specifically assigned for the graduate student seeking degrees other than the M.D. Particular emphasis is given to the relation of basic science to clinical problems. Ward rounds, delivery room, and operating room observation is included. Limit 15.
- 350. Advanced Obstetrics and Gynecology** (6 q h cr per q—max 24) Staff
Conferences, demonstrations, and clinical assignments designed to familiarize the student with all phases of obstetrics and gynecology. The application of anatomy, physiology, biochemistry, pathology, and microbiology will be stressed. Diagnosis and management of obstetric and gynecologic conditions will be emphasized.
- 351. Gynecological Pathology** (3 q h cr per q—max 9) Staff
An advanced course in gross and microscopic pathology in the field of obstetrics and gynecology. The student is required to attend two weekly conferences in gynecologic pathology. Clinical work consists in preparation, review, and description of all specimens submitted in this area.
- 352. Pelvic Anatomy** (4 q h cr) Holyoke
Special dissection and study to cover the basic science aspects of anatomy and embryology as applied to obstetrics and gynecology. This work will consist of special dissection, reading, and histologic study of the generative tract.
- 353. Gynecological Radiology** (1-5 q h cr) Hunt, Staff
Readings, demonstrations, clinics and seminars designed to show the application of radiographic and radio-therapeutic principles and procedures of obstetrics and gynecology. Conducted in conjunction with the department of radiology, this course gives experience in radiographic techniques, the interpretation of films and the use of X-ray and radium. Independent reports will be required.
- 354. Advanced Course in Gynecological Surgery** (4 q h cr per q—max 8) Pearse
Conferences and demonstrations of principles and technic of gynecological surgery. The student will perform surgical procedures under the supervision of the supervisory staff. Special technics such as culdoscopy and gynecography are included.
- 355. Endocrinology of the Sex Hormones** (3-5 q h cr) Wilder
Prereq MedBiochem 310 or its equivalent
A lecture course designed to acquaint the student with the chemistry and metabolism of the estrogens, androgens, progestational substances, and gonadotropins. Essential information on adrenal hormones will be included as needed.
- 356. Gynecologic Endocrinology** (3-5 q h cr per 4 weeks; 4 weeks)
Prereq Biochem 350-C and Obstet&Gyn 355
A course in applied endocrinology with emphasis on the diagnosis and clinical management of patients with endocrine disorders relating to reproductive function.
- 357. Obstetrical Hematology** (3 q h cr) Messer, Pearse
A course in applied hematology with emphasis on problems which occur in pregnancy. The lecture series will be accompanied by laboratory work and by clinical work in the clinic and hospital.

358. **Research in Obstetrics and Gynecology Other Than Thesis** (cr arr)
Specific capacities for research in cancer, family planning, and maternal and infant care exist within the department.
359. **Seminar** (Weekly Friday seminar, 12:15 p.m., 1 cr per q for Graduate College enrollees, I, II, III) Pearse, Staff
368. **Teratology** (Anatomy 368) (2 q h cr III) Severn
A study of potential or known causes of congenital malformations: their deviation from normal development; their frequency and distribution and their management. Given during the second 4 weeks—spring quarter.
398. **Master's Thesis** (9-15 q h cr)
399. **Doctoral Thesis** (cr arr)

Ophthalmology

Professors Gifford, *Chairman*, Morrison; Associate Professors Alliband, Eagle, Filkins, Truhlsen; Assistant Professors Latta, Meissner, Vickery; Instructors Dinsdale, Faier, Nye, Pemberton, Singer; Clinical Associate Professor Wood; Emeritus Judd.

Ophthalmology.—

320. **Medical Ophthalmology** (1 hr weekly, total 22 hrs III)
The didactic course consists of demonstrations and lectures on diseases of the eye, including ocular changes in general diseases. The lectures are illustrated by cases, diagrams, charts, and slides. The course is supplemented by textbook work and quizzes.
340. **Dispensary** (Total 36 hrs SS, I, II, III)
Students are regularly assigned to the dispensary clinic for practical experience in the diagnosis and treatment of eye conditions. This course includes a drill in the principal uses of the ophthalmoscope and other instruments employed in the diagnosis of diseases of the eye.

Orthopedic Surgery

Associate Professor L. Thomas Hood, *Chairman*; Professor Hamsa, Sr.; Associate Professor Teal; Assistant Professors Bach, Burney, Smith; Clinical Assistant Professors Mitchell, Stone; Clinical Instructors Horn, Webster; Instructors Dinsmore, Hamsa, Jr., Minard, Pitner, Scott-Miller.

Orthopedic surgery deals with the diseases, deformities, and injuries of the structures composing the musculo-skeletal system.

Orthopedic Surgery.—

330. **Diseases of Bones and Joints** (I)
Lecture clinics on disease of bones and joints, synovial membranes and bursae. Congenital, acquired, and disease-producing deformities. Prevention of deformities and dystrophies with principles of treatment. Illustrated by photographs, slides, etc.
332. **Fractures, Dislocations and Sprains** (SS, I, II, III, IV)
Lectures, quizzes, and demonstration course on fractures, dislocations, and sprains. X-ray diagnosis with application of splints and casts.
343. **Orthopedic Clinical Clerkship** (Elective, 5 wks)
Clinical experience with members of the Orthopedic Staff at the University Hospital and affiliated hospitals. May be substituted for Surgery 341 or 343 by arrangement.

Otorhinolaryngology

Associate Professors Yarrington, *Chairman*, Carp, Klabenes, Lovgren; Assistant Professor Crowley; Clinical Assistant Professor P. Peterson; Associates Allan Davis, Gillies; Instructors Beck, Carter, Yonkers; Participating Consultant Bunker; Senior Consultant Cassidy, John Calvin Davis, Jr.

Otorhinolaryngology.—

One lecture is given on the anatomy of the ear and temporal bone and demonstration of the tympanic membrane in the freshman year in Anatomy. Two lectures on the examination of the ear, nose, pharynx, and larynx; and two 2-hour demonstrations on the use of instruments commonly used in ORL examinations are given in conjunction with the sophomore course in Physical Diagnosis.

- 350. Fellowship in Otorhinolaryngology** (7 cr hr)
A period of approximately five weeks spent full time in the Department of Otorhinolaryngology participating in all the teaching sessions of the Department. During this time a research project will be carried out and a report rendered to the supervising staff.
- 351. Advanced Otorhinolaryngology** (2 q h cr per q, max 8)
A series of weekly conferences including one hour of didactic lecture followed by one hour of symposium, covering during the course of the year the broad field of otorhinolaryngology and its application to the clinical and surgical practice of otorhinolaryngology.
- 352. Advanced Clinical Otorhinolaryngology** (3 q h cr per q, max 8)
A course in clinical otorhinolaryngology utilizing the outpatient clinic where, under supervision of the staff, the graduate student participates in the total care of the outpatients seen.
- 353. Otorhinolaryngology Seminar** (2 q h cr per q, max 8)
- 398. Master's Thesis** (9-15 q h cr)
- 399. Doctoral Thesis** (cr arr)

Pathology

Professors McWhorter, *Chairman*, Berton, John Schenken, Tollman; Associate Professors Simons, *Assistant Chairman*, Kulesh, Larsen, Wilson; Clinical Associate Professor Tanner; Assistant Professors Fitch, Greene, Hoffman, Jones, Long, Papenfuss, Roffman, Gerald Schenken, Scott, F. Smith, Tamisiea; Instructors Engstrom, Grier, M. Haven, Hicks, Padgett, Skogg, E. Smith, Stastney; Assistant Instructors Blease, Dreessen, Kruger, Lohff, Pohle.

It is the aim of this department to acquaint the student with the etiology, the pathologic physiology, and the morphologic changes produced by disease processes in the human body.

Pathology.—

- 321. General Pathology** (I, II, III)
This course emphasizes the etiology and morphologic alterations produced by disease processes. It comprises the general principles of the reaction of the body to injury and of specific disease processes in detail by organ systems in both lecture and laboratory exercise. This course is closely integrated with the course in Medical Microbiology 320 so that at the time the student studies microbiologic aspects of microorganisms, the alterations produced in the tissues and organs of the body by the same organisms are covered.
- 322. Clinical Pathology** (I)
The lecture and laboratory course emphasizes selection and performance of laboratory tests used by the physician. The student becomes proficient with many such tests and acquires a working knowledge of the remainder. Special emphasis is placed upon the selection of tests and the interpretation of the results of such tests, correlating these results with the clinical findings.
- 331. Clinical Pathology** (I, II)
Continuation of course 322.
- 332. Clinical Pathology Conference** (II, III)
Selected cases are presented by a clinical department and the Department of Pathology for discussion of the differential diagnosis, management, and correlation of the clinical findings with the pathology.
- 333. Correlative Clinical Pathology** (I, II, III)
Selected cases are discussed from the standpoint of correlation of clinical observations with radiological and pathological findings. Whenever possible these cases parallel the lectures given in clinical departments.
- 340. Clinical Pathology Conference** (I, II, III)
Continuation of Course 332.
- 341. Forensic Medicine** (II)
A discussion of the aspects of forensic medicine.
- 350. Laboratory Supervision and Administration** (2 q h cr) Larsen
Principles and application of clinical laboratory organization, standard operating procedures, laboratory budgets, supply and equipment purchasing, record keeping, personnel relations, employee interviews, hospital-laboratory relationships will be presented.

- 351. Educational Administration in Medical Technology** (2 q h cr)
An introduction to the duties of the teaching supervisor will be presented, including selection, admission and counseling of students, curriculum planning, lecture preparation, and the construction and grading of examinations. The role of the teaching supervisor in public relations and in-service education will also be emphasized.
- 352. Instrumentation and Quality Control** (3 q h cr)
Presentation of various laboratory instruments, technical differences, principles of operation, calibration and maintenance. Principles of statistics as applied to quality control will be presented as well as techniques for insuring accuracy and reproducibility.
- 353. Coagulation and Blood Components** (2 q h cr)
Discussion of the theory of blood coagulation, the clinical tests used to diagnose coagulation disorders and therapy in patients with coagulation diseases. The preparation of various blood fractions to be used therapeutically will be presented.
- 354. Blood Bank Administration** (2 q h cr)
This course is intended to acquaint the technologist with record keeping, blood usage, blood replacement, quality control, sterility testing, and legal responsibility in blood banking.
- 356. Autopsy Pathology** (8 q h cr) McWhorter, Schenken
Prereq Path 320
In addition to participation in autopsies, the student will study in detail both gross and microscopic tissue changes, and will correlate these with clinical findings.
- 357. Pathology of Tumors** Simons, Tollman, Wilson
A. An Intensive Course in Oncology, with Special Attention to the Morphology, Derivation, and Course of Various Tumors (4 q h cr)
Prereq Path 356
B. Studies of Bone Tumors (3 q h cr)
Prereq Path 357-A
D. Studies of Tumors of the Nervous System (3 q h cr)
Prereq Path 357-A
- 358. Etiology of Tumors** (1 q h cr) McWhorter, Wilson
Prereq Path 356
This will be a general study of the subject of tumor etiology with special emphasis on the phases represented by the investigative work carried on by the student. In large part this will be carried on by study of the periodical literature.
- 359. Seminar** (1 q h cr) Staff
Prereq Permission
- 361. Ultrastructural Methods in Pathology** (4-8 q h cr) Wilson
Lect 2 lab 4 or arr. Two consecutive qtrs
Instruction in the techniques for the preparation of human biopsy specimens, experimental animal tissues, bacteria and viruses for electron microscopic examination. The course will include material on the theoretical and practical aspects of the structure and operation of the electron microscope.
- 362. Ultrastructure of Cells and Tissues** (3 q h cr) Wilson
Instruction in modern concepts of cell ultrastructure and the association of cells in tissues, with emphasis upon the known correlations between structure and function.
- 363. Ultrastructural Pathology** (3 q h cr) Wilson
Prereq Path 321, 356
Instruction in the ultrastructural aspects of diseased cells and tissues with emphasis on preparation of the student for interpretation of the literature and for research in this area.
- 364. Non-Thesis Research** (cr arr)
Prereq Path 356 and 357
- 365. Advanced Hematology** (Internal Medicine 356) (1 q h cr per q—total 4) Larsen, Pratt, Rigby, Wilson
- 398. Master's Thesis** (9-15 q h cr)
- 399. Doctoral Thesis** (cr arr)

Pediatrics

Associate Professor Van Leeuwen, *Chairman*; Professors Chapple, Crofoot, Gibbs, Jenkins, Kugel, Pearson, Robertson, Thomas; Clinical Professor Stafford; Associate Professors C. Angle, Corliss, Eisen, Klok, Menolascino, Mooring, Morrison, Saslow, Schreiner, Smith, Wolfensberger; Clinical Associate Professors Bancroft, Stewart; Assistant Professors Amato, Dutch, L. Eaton, Green, Hadley, Kepler, Kincaid, Mason, McGee, McIntire, Nilsson, Oberst, Rath, Simon, Wiltse, Zahller; Clinical Assistant Professor Bosley; Research Assistant Professors Ebadi, Trembath; Associate Ebers; Instructors Edwards, Erickson, Hubbard, Pellegrino, Perry, Timmons, Turner; Clinical Instructor Fijan, Grant; Research Instructor Al-Rashid; Assistant Instructors Anderson, Berg, Carey, Dunning, N. Fieber, Fleming, Focht, Heaston, Kimmel, Kliever, Struempfer, Tarsney.

The aim of this department is to develop in the student an understanding of human growth and development, as well as the diseases characteristic of infancy, childhood, and adolescence. This is done through the lectures and demonstrations, small group bedside conferences and seminars, clinical clerkship at the University Hospital and the Children's Memorial Hospital and the outpatient service at the University Hospital. Special orientation and training in rehabilitation are given at the C. Louis Meyer Children's Rehabilitation Institute.

Undergraduate students are encouraged to participate in research on a wide variety of projects, and students who show particular interest in a given problem are afforded guidance and support in their scientific investigations.

PEDIATRICS.—

320. Growth and Development (II, III)

Lectures on human growth and development, covering the basic principles of physical growth and lectures on the psychological and sociological factors affecting human development from birth through adolescence. Some of the anomalies and diseases of the newborn period will be covered.

330. Diseases of Childhood (I, II, III)

In this course are covered the various diseases and disorders of childhood, including the diseases by systems, deviations in growth and development, nutritional diseases, and communicable diseases.

335. Clinical Clerkship (33 hrs weekly, total 175 hrs I, II, III, IV)

Junior students are assigned to the Jahr Pavilion, the Intensive Care Unit, the Adolescent Ward, and Children's Memorial Hospital. Students are expected to work up patients admitted to these areas including history, physical examination, routine and special laboratory tests, in order to establish a diagnosis and plan an effective therapy. They are encouraged to take active participation in management and are expected to have full knowledge of the cases assigned to them and also to be familiar with patients assigned to other students while they are in the hospital.

Students are also expected to attend several conferences and other activities that occur in the department, such as the Pediatric Pathology Conference. They also have several discussions and seminars with different staff members in their subspecialties.

In addition students are encouraged to attend certain functions at Children's Memorial Hospital.

PEDIATRICS ELECTIVES.—

341. Pediatric Pharmacology, Clinical (1 lecture per week, III) Ebadi

The course consists of prenatal, perinatal, and neonatal pharmacology. The physiological and biochemical changes which influence drug metabolism during these periods will be discussed. Comparison course to Pharmacology 337.

342. General Pediatric Out-Patient

(See 344)

344. General Pediatric Elective (Each 4 weeks; can be extended to 8 or 12 weeks)

The student's individual desires will be met by this flexible program. Any combination of nursery, inpatient, outpatient, pediatric intensive care unit or preceptorial arrangement can be designed. Under faculty supervision, the student will be expected to perform as a junior house officer, being involved with the management of patients. Limit 20, however 2 or 3 per subchoice.

A. Cardiology Corliss, Mooring

B. Care of the Handicapped Child Pearson, Trembath

C. Hematology Al-Rashid

D. Metabolism, Endocrinology Jenkins, Wiltse

E. Neonatology Van Leeuwen

F. Pulmonary Disease Gibbs

G. Allergy Hadley

H. Nephrology Angle

I. Neurology Pellegrino

- 345. Senior Clinical Pediatric Neurology Clerkship** (SS, I, II, III) Pellegrino
Senior students may elect a period of at least 4 weeks during which additional experience in pediatric neurology may be obtained. Clinical experience with both inpatients and outpatients is emphasized but additional exposure to neurosurgery, electroencephalography, neuropathology, neuropsychology and/or research may be obtained to fit the individual needs and desires of the clerk.
- 350. Pediatric Gastroenterology** (3 q h cr, total 9) Gibbs
Prereq Medical school courses as follows: biochemistry, physiology, and histology or their equivalents
The special characteristics of the gastrointestinal physiology of the normal infant and the pathological physiology, clinical manifestations, and treatment of gastrointestinal diseases of special importance in early life will be surveyed. Particular attention will be given to the chronic metabolic diarrheas.
- 351. Endocrine and Metabolic Diseases in Early Life** (3 q h cr per q, total 9) Gibbs, Jenkins, Wiltse
Prereq same as in Ped 350
The normal endocrine physiology is reviewed as it pertains to the infant, child, and adolescent. Abnormalities of endocrine and metabolic nature in early life are considered.
- 353. Developmental Behavior Pattern of the Newborn** (3 q h cr per q, total 6) Kugel
Prereq M.D. degree or B.S. in Nursing or undergraduate major in psychology
A study of activities of the normal infant as related to environmental factors.
- 354. Pediatric Cardiology** (3 q h cr per q, total 9) Mooring
Prereq Ped 341 and 342
Acquisition of experience in examination of the heart of the infant and child, including physical examination and study of fluoroscopy, electrocardiography, angiography and cardiac catheterization. Experience in the diagnosis and treatment of cardiac diseases in pediatrics. Management of problems of cardiovascular physiology during and following open heart surgery.
- 355. Advanced General Pediatrics** (SS, I, II, III, 6-12 q h cr) Van Leeuwen
Prereq Ped 341 and 342
Students study special patients presenting diagnostic and therapeutic problems of unusual interest. These studies summarize all pertinent literature and include laboratory procedures not routinely available.
- 359. Research in Pediatrics** (cr arr) Staff
- 398. Master's Thesis** (9-15 q h cr)
- 399. Doctoral Thesis** (cr arr)

ELECTIVE.—

A senior student may elect to spend four or more weeks with a member of the pediatrics staff or in the department. Subspecialty areas include: hematology and oncology; intensive care; nephrology; pulmonary disease (including allergy and cystic fibrosis); neurology; neonatology; cardiology; general pediatrics; and care of the handicapped child.

Pharmacology

Associate Professor Gessert, *Acting Chairman*; Professors Lambooy, McIntyre; Associate Research Professor Humoller; Assistant Professors Ebadi, Hendrickson, Miles, Wong; Instructors Gatz, Sievers.

- 321. Medical Pharmacology** (lectures, demonstrations, and laboratories, total 146 clock hrs, II, III)
General principles of pharmacology; drug actions on the central, peripheral and autonomic nervous systems and on cardiovascular, renal, gastrointestinal, metabolic, and endocrine functions; chemotherapy of infectious diseases and neoplasms, toxicology; misuse of drugs.
- 330. Technique in Experimental Pharmacology** Staff
Prereq Pharmacol 321 or equivalent. Periods offered: All day commitment 5 days per week for 4 weeks, or half day 5 days per week for 8 weeks. Summer or fall quarter. Student limit: 2 by arrangement with individual staff member.
This course is intended to give guidance and provide experience in a specialized area of experimental pharmacology of mutual interest to a staff member and the student(s).
The four courses immediately following (335, 336, 337, 338) are lecture and/or seminar courses which will meet three times per week for 4 weeks. The prerequisite for each is Pharmacology 321 or equivalent. Limited to a minimum of 6 students with no maximum limit.

- 335. Principles of Drug Action** (1st 4 weeks, I) Gessert, Hendrickson
Consideration of absorption, distribution, metabolism, and elimination of drugs; structure-activity relationships; drug allergy, resistance, tolerance, idiosyncrasy, teratogenesis.
- 336. Effects of Drugs on Bioenergetics** (2nd 4 weeks, II) Gatz
Biochemical considerations of the effects of selected drugs upon cellular respiration and glycolysis.
- 337. Developmental Pharmacology** (Last 4 weeks, I) Ebadi
Physiological and biochemical changes that influence drug metabolism during the developmental period (prenatal to adult). Some of the content of this course is similar to that of Pediatrics 341, except that here basic mechanisms are emphasized rather than clinical applications.
- 338. Toxicology** (1st 4 weeks, I) Hendrickson, McIntyre
Poisons, acute and chronic; methods of detection and measurement; antidotes and principles of treatment.
- 350. Technic in Experimental Pharmacology** (1-9 q h cr) Staff
Prereq Pharmacol 321 or equivalent
This course consists of instruction in the preparation of organs and tissues *in situ* and *ex situ* for experimental study; instruction in the construction, manipulation, and operation of apparatus.
- 351-A. Advanced Pharmacology** (1-9 q h cr) Staff
Prereq Pharmacol 350 or equivalent
In vivo aseptic preparations; instruction in the fundamental technics of aseptic surgery in the preparation of animals for study.
- 351-B. Advanced Pharmacology** (1-9 q h cr) Staff
Prereq Pharmacol 350 or equivalent
In vivo preparations of tissues for metabolism studies, perfusion of organs, isolated heart preparations, isolated smooth and striated muscle, etc.
- 352-A. Advanced Pharmacology—Toxicology** (1-9 q h cr) Hendrickson, McIntyre and Staff
Prereq Pharmacol 350 or equivalent
The recognition of poisons in the body; quantitative determinations of toxic substances in necropsy materials and excreta; Spectrophotometric determinations of metallic ions; qualitative and quantitative tests for drugs by chromatographic and other methods.
- 352-B. Advanced Pharmacology—Bioassay** (1-9 q h cr) Humoller, Gessert, McIntyre
Prereq Pharmacol 350 or equivalent
The assay of drugs, hormones, and vitamins by biometric methods.
- 353-A. Vitamin and Endocrine Studies—The Deficiency State** (1-9 q h cr) Staff
Prereq Pharmacol 350 or equivalent
Animal experiments on deficient diets; avitaminosis; etc.
- 353-B. Vitamin and Endocrine Studies—The Endocrine System** (1-9 q h cr) Staff
Prereq Pharmacol 350 or equivalent
Studies in hypo- and hyper-hormonal activity; technics for extirpation of glands of internal secretion.
- 354. Application of Pharmacology to Clinical Problems** (1-9 q h cr) McIntyre, Jones, Sievers
Prereq Pharmacol 350 or equivalent
Special use of drugs and their diagnostic and therapeutic use in clinical problems.
- 355. Special Applications of Pharmacology to Industrial Medicine and Surgery** (1-9 q h cr) Jones, McIntyre, Sievers
Prereq Pharmacol 350 or equivalent
- 356. Biochemistry of the Cell** (4-15 q h cr) Staff
Prereq Pharmacol 350 or equivalent
Emphasis on the physiology, biochemistry and pharmacology of anatomical units of the neuro-muscular system, and the effects of drugs and poisons on their functions and enzyme systems.
- 357. Seminar** (1 or 2 q h cr per q) Staff
- 398. Master's Thesis** (9-15 q h cr)
- 399. Doctoral Thesis** (cr arr)

Physical Medicine and Rehabilitation

Associate in Physical Medicine Morris, *Acting Chairman*, Professor Hunt; Assistant Professor Frost, Associates Aita, Bach, Fricke, Malashock, Swenson, Thomas; Lecturers Breed, Donovan, Dunevitz, Hobbs, Vogt; Demonstrators Bohnenkamp, Burton. *The principles and techniques of Physical Medicine and Rehabilitation are presented at assigned times to the student body.*

230. Principles of Physical Medicine and Rehabilitation (2 q h cr I, II, III)

Covers the aspect of their individual (i.e., members of staff) fields of work or specialty concerned in the total approach to evaluation and treatment of disabled persons. This course presents the principles and philosophy of physical medicine and rehabilitation and includes student orientation in the multiple technical fields necessary to effect the rehabilitation process of disabled patients. The course is presented in lecture, demonstration, and conference forms.

Physiology

Professors Bennett, *Chairman*; Ellingson, Lowenberg, Tobin; Associate Professors W. D. Angle, Lim, Rose, Stratbucker, Ware, Williams (Psychophysiology); Assistant Professors Miles, Myers, Wolf; Instructors Graham, Haack.

Courses 310 and 320 in Medical Physiology and Biophysics are required for the degree of Doctor of Medicine. They provide a widely inclusive study of functional mechanisms within the human body. Function is studied from the standpoint of the total man, as he reacts to his external and internal environments and also in relation to his several functional systems, specialized tissues, cells and cellular components.

To complement biochemical and morphological studies in other departments, emphasis is placed upon the application of biophysical principles to the understanding and measurement of processes in the body.

These medical courses include considerable pathophysiology with illustrative problems from clinical medicine to reinforce the student's understanding of normal function and to prepare him for the application of physiological and biophysical principles to clinical medicine. Courses 310 and 320 may carry graduate credit toward a minor for a graduate student majoring in another department.

Graduate studies leading to the M.S. and Ph.D. in Physiology are designed primarily to prepare the student for an academic career in a medical setting. Courses numbering 350-379 carry graduate credit toward advanced degrees, and, by special arrangement with the department, may be taken as electives by medical students, interns, or residents. See the Bulletin of the Graduate College for details concerning advanced degree programs.

310. Medical Physiology (lectures, laboratory, demonstrations and conferences, total 132 clock hrs III) 1-7 qtr hrs graduate credit except for those completing a graduate major in Physiology. Staff
General cellular physiology; nerve muscle, central nervous system and special receptor systems.

320. Medical Physiology (lectures, laboratory, demonstrations and conferences, total 168 clock hrs I, II, 3 weeks) 1-7 qtr hrs graduate credit except for those completing a graduate major in Physiology. Staff
Respiratory, cardiovascular, renal, gastrointestinal and endocrine.

350. Special Topics (1-3 q h cr per q, max 12) Staff

Prereq Physiol 310 and 320 or equivalent

A methodical overview of the fields within Physiology, taken in rotation, to provide the graduate student majoring in Physiology with a general knowledge of the subject at the level of present day research. It is expected that the candidate for the Ph.D. degree will be registered for this course throughout the major part of his graduate study. By special permission, a student may register for part of this course in support of a master's program or a minor in Physiology.

351. Technique in Experimental Physiology (1-9 q h cr) Bennett, Staff

Prereq Physiol 310 and 320 or equivalent

This course consists of instruction in surgical procedures on mammalia, reptilia, and amphibia and the preparation of organs and tissues *in situ* and *ex situ* for experimental study.

352. Application of Mathematical Principles to Physiological Analysis (1-9 q h cr) Staff

Prereq Physiol 310 and 320 or special permission

Study of the behavior of physiological mechanisms utilizing first and second order linear differential equations, the Laplace transformation and selected topics from calculus and advanced mathematics.

- 353. Application of Physical Principles to Physiological Analysis** (1-9 q h cr) Staff
Prereq Physiol 310 and 320 or special permission
 Physical and electronic principles as used in physiological measurement and analysis.
- 354. Application of Physiology to Clinical Problems** (1-9 q h cr) Paustian, Tobin, Ware, Wolf
Prereq Physiol 351
 Electrocardiography, electrostethoscopy, electromyography, electroencephalography, study of neurological lesions by physiological methods, pathophysiology of cardiovascular disease including cardiac failure and shock, application of clearance techniques and other methods of evaluation of renal disease, clinical evaluation of respiratory function, and the application of experimental methods to the study of problems of disturbed gastrointestinal motility and secretion.
- 360. Advanced Electrophysiology** (1-9 q h cr) Bennett, Stratbucker, Ware
Prereq Physiol 351
 Theory and methods related to the study of electrochemical processes at the cellular level and a correlation of these with specific mechanisms in specialized tissues.
- 361. Advanced Cardiovascular Physiology** (1-9 q h cr) Angle, Stratbucker
Prereq Physiol 351
- 362. Advanced Respiratory Physiology** (1-9 q h cr) Ware
Prereq Physiol 351
- 363. Advanced Renal Physiology** (1-9 q h cr) Ware, Wolf
Prereq Physiol 351
- 364. Advanced Gastrointestinal Physiology** (1-9 q h cr) Paustian
Prereq Physiol 351
- 365. Advanced Neurological Physiology** (1-9 q h cr) Bennett, Ellingson, Rose
Prereq Physiol 360
- 370. Biomedical Instrumentation** (1-5 q h cr except for those completing a graduate major in Physiology) Haack, Stratbucker
Prereq Physiol 352
 (Credit will not be allowed in both this course and EE 200)
 An introduction to electronic circuits, vacuum tube and transistor amplification. Methods of detecting, recording, and measuring biological signals. Instrumentation as a system.
- 371. Electric and Magnetic Fields and Traveling Wave Phenomena in Physiology** (1-9 q h cr) Angle, Myers, Stratbucker
Prereq Physiol 352 and 353 or special permission
 Study of electrostatic, magnetostatic, and electrodynamic physiological mechanisms and various traveling wave phenomena in physiology.
- 372. Application of Linear Systems Analysis and Control Theory in Physiology** (1-9 q h cr) Angle, Stratbucker
Prereq Physiol 352 and 353 or special permission
 Systems analysis of physiological mechanisms using transform methods, analysis of physiological control mechanisms and study of stability criteria.
- 373. Analog and Digital Computer Techniques in Physiology** (1-9 q h cr) Angle, Stratbucker
Prereq Physiol 352 and 353 or special permission
 Analog and digital computer solution of physiological mechanisms described by linear and nonlinear differential equations, simulation of physiological mechanisms and use of computers to plan and control laboratory experimentation.
- 377. Seminar** (1-2 q h cr per q) Staff
 By special arrangement
- 379. Research Other Than Thesis** (1-9 q h cr) Staff
 By special arrangement
- 398. Master's Thesis** (9-15 q h cr)
- 399. Doctoral Thesis** (cr arr)

Preventive Medicine

Assistant Professor J. Calvin Davis, *Acting Chairman*; Professor Potthoff; Associate Professors Fuenning, Rogers, Sills; Assistant Professors M. Johnson, Kutler, Stafford, Storter, J. Thompson; Instructor Manthey; Lecturers Crabill, DuBois, McArdle.

These courses aim to give the students basic orientation and preparation related to physician's increasingly important responsibilities in preventing disease, promoting efficiency, acting as health counsellors and serving as community leaders in health matters.

310. The Accident Problem and Field Emergency Care (III)

This course is offered cooperatively with the Department of Surgery. Includes study of the epidemiology of accidents and methods of immediate care under field conditions.

320. Principles of Preventive Medicine (2 hrs weekly, I; 1 hr weekly for eight weeks II)

Fundamentals of epidemiology as applied to the infectious diseases.

321. Principles of Preventive Medicine (2 hrs weekly, III)

Introduction to statistical analysis; community health, occupational and environmental health; economics of health care.

330. Clerkship in Preventive Medicine (I, II, III)

Epidemiology of chronic disease. Field trips to facilities and agencies of public health importance; topic and case studies embodying aspects of disease prevention, use of community resources and comprehensive care; medical socio-economics.

Psychiatry

Professors M. Eaton, *Chairman*, Ellingson, Roth, Tunakan, Wigton, Wittson; Research Professor Carver; Associate Clinical Professor Stein; Associate Professors Aita, Bartholow, Eisen, Menolascino, Muffly, Rose, Starr, Strider, J. Williams, Wolfensberger; Assistant Professors Benschoter, Berry, Copenhaver, L. Eaton, Garetz, Goldner, Osborne, Peck, Peterson, Scofield, M. Williams, Yager; Associates Gray, Ingham, R. Jones, Young; Instructors Blose, Cunningham, Herrick, Hubbard, Innes, Kenney, Melcher, Michael, Nelle, Okura, Richardson, Schaefer, Sjogren, Slagle, Sonderegger, Timmons, Van Fleet, Updegraff, Waite, West, Wieland, Wisman, Wood; Assistant Instructors Funk, Goodloe, Hardt, Hasenyager, Koff, Lathrop, Pyle, Riederer, Sasser, Stocker, Tubis.

Courses are planned to give the student, commencing in his freshman year, correlated, progressive training in the anatomical, physiological, and psychological fundamentals of psychiatry.

Lectures and demonstrations in the freshman year emphasize the significance of personality development in relation to normal and abnormal functioning. The sophomore program consists of lectures and case demonstrations in basic psychiatry which include descriptive and dynamic psychopathology and technics of examination. In the junior and senior years stress is placed on supervised experience with psychiatric patients, on inpatient, day-patient, and outpatient basis. Formal lectures are kept to a minimum. Instruction in psychiatry is correlated with the teaching in other departments.

Psychiatry.—**310. Introduction to the Behavioral Sciences and Personality Development (II, III)**

Affleck, Starr, J. Williams

This course consists essentially of two sections. The first section constitutes an introduction to the behavioral sciences. This sequence surveys basic concepts in the behavioral sciences, methods of studying behavior, and the general adaptation of the organism to environment and culture. The second section will cover the mental health aspects of human development. The range of normal and abnormal emotional and interpersonal functioning will be outlined as it refers to both the "normal" population and the psychiatric population in our society. Some initial concepts and perspectives preparing the medical student for the role of a mental health practitioner receives central emphasis.

320. Basic Psychiatry (1 hr weekly, I, II, III) M. Eaton, Peterson, West

During this course lectures and demonstrations of clinical material are held at the Nebraska Psychiatric Institute. The historical background of psychiatry, methods of interviewing, history-taking and general mental examination are presented. Descriptive aspects of clinical syndromes are presented. The course is preparatory to the junior clerkship in psychiatry and gives the student a basic understanding of mental illness from the standpoint of a general practitioner.

335. Clinical Clerkship (SS, I, II, III)

A full time eight week clerkship with three hours per week in conjunction with Preventive Medicine is elected in either the junior or senior year. Students are assigned to instructors on a tutorial basis and under this detailed supervision are assigned patients on the adult inpatient service (may include adolescent unit, alcohol unit, Veterans Administration Hospital psychiatry service); adult outpatient service; children's service; handicapped children's clinic; and the liaison service. Although assigned to a specific service, a core-curriculum of lectures, seminars, and demonstrations of common psychiatric disorders provides each student with experiences on all services of the Nebraska Psychiatric Institute.

- 342-A. Office Psychiatry** (4, 8, or 12 weeks, full or half time, I, II, III, SS) Peterson
Prereq Sophomore standing
 Lectures, seminars, demonstrations in individual and group psychotherapy and psychopharmacology with adult outpatients. Limit 6 per 4-week period.
- 342-B. Alcohol Problems: Studies in Treatment and Prevention of Alcoholism** (4, 8, or 12 weeks, full or half time, I, II, III, SS) Blose
Prereq Clerkship in psychiatry
 Lectures, demonstrations, seminars. Working with adult inpatients and outpatients and with various community facilities. Limit 2 per 4-week period.
- 342-C. Hospital Practice of Psychiatry** (4, 8, or 12 weeks, full or half time, I, II, III, SS) Bartholow
 (Nebraska Psychiatric Institute)
Prereq 2nd, 3rd, 4th year
 Lectures, demonstrations, seminars. Individual and group psychotherapy and psychopharmacology and working in a community clinic. Limit 8 per 4-week period.
- 342-D. Hospital Practice of Psychiatry** (4, 8, or 12 weeks, full or half time, I, II, III, SS) Bartholow
 (Veterans Administration Hospital)
Prereq 2nd, 3rd, 4th year
 Lectures, seminars, demonstrations. Individual and group psychotherapy and psychopharmacology experience. Includes working in an outpatient clinic and on a consultation service. Limit 8 per 4-week period.
- 342-E. Psychiatric Problems of Adolescents** (4, 8, or 12 weeks, full or half time, I, II, III, SS) Kenney
Prereq 2nd, 3rd, 4th year
 Lectures, demonstrations and seminars on adolescent problems. Clinical experience in working with adolescents and their families and with other community agencies concerned with adolescents. Limit 2 per 4-week period.
- 342-F. Psychiatric Problems of Children** (4, 8, or 12 weeks, full or half time, I, II, III, SS)
Prereq 2nd, 3rd, 4th year
 Lectures, demonstrations, and seminars. Clinical experience working with children inpatients and outpatients and their families. Also, experience with community agencies working with children. By arrangement.
- 342-G. Research in Psychiatry** (4, 8, or 12 weeks, full or half time, I, II, III, SS) Ellingson
Prereq 2nd, 3rd, 4th year
 Laboratory or clinical research under direction in selected areas of psychiatry and/or behavioral sciences. By special arrangement.
- 342-H. Marital Counselling** (cr arr I, II, III, SS)
Prereq 2nd, 3rd, 4th year
 Lectures, demonstrations, seminars, and clinical experience in marital counselling. By special arrangement.
- 342-I. Readings in Clinical Psychology** (cr arr, I, II, III, IV) Strider
 First year
 Lectures, demonstrations, seminars regarding group interaction, psychological testing, and psychopathology. By special arrangement.
- 342-J. Readings in Alcoholism** (cr arr I, II, III, SS) Blose
 First year
 Lectures, demonstrations, seminars, and review of literature concerning alcoholism. By special arrangement.
- 342-K. Introduction to Research Methods** (cr arr, I, II, III, SS) Strider
Prereq 2nd, 3rd, 4th year
 Lectures, demonstrations, seminars, and practical experience in scientific methodology and thinking oriented specifically towards the needs of the student in medicine with regard to research and evaluative methods. By arrangement.
- 342-L. Mental Retardation** (4, 8, or 12 weeks, full or half time) Menolascino
Prereq 2nd, 3rd, 4th year
 Lectures, demonstrations, seminars in mental retardation with clinical experience in evaluation and treatment methods. Student will also work with community facilities involved in working with the retarded.

- 342-M. Psychosomatic Medicine** (4, 8, or 12 weeks, full or half time) Muffy
Prereq 2nd, 3rd, 4th year
 Lectures, demonstrations, seminars, and clinical experience on the liaison service of the Nebraska Psychiatric Institute. Student will be working with patients who have certain psychological and physical problems. By special arrangement.
- 342-N. Psychopharmacology** (4, 8, or 12 weeks, full or half time, I, II, III, SS) Menolascino
Prereq 2nd, 3rd, 4th year
 Lectures, demonstrations, seminars with guided clinical experience in the area of psychopharmacology. By special arrangement.
- 342-O. Community Mental Health** (4, 8, or 12 weeks, full or half time, I, II, III, SS) Okura
Prereq 2nd, 3rd, 4th year
 Lectures, demonstrations, seminars with experience in working with the Social and Preventive Psychiatry Division of the Nebraska Psychiatric Institute. By special arrangement.
- 342-P. Neurochemistry** (III) Carver
Prereq Biochem 310; 2nd, 3rd, 4th year
 A basic course in particular aspects of the chemistry of the central nervous system. The material will cover survey lectures of the sub-cellular units, metabolic compartments, and the regional distribution of chemical components. Current literature will be reviewed by the student and presented as part of the course content. By special arrangement.
- 342-Q. Introduction to Counselling of Sex Problems** (cr arr I, II, III, SS) Bartholow, Kenney
Prereq 2nd, 3rd, 4th year
 Lectures, seminars, and clinical experience in the area of individuals with sexual problems.
- Courses oriented toward graduate students in nursing, occupational therapy and psychiatry.—**
- 305. Activity Therapy Analysis** (3 q h cr) Peck
Prereq Open only to qualified students in the fields related to psychiatry and upon approval of instructor
 A psychodynamic approach to the analysis of activities used in psychiatric occupational therapy. The analysis of activities as they relate to creativeness, sociability, expression of hostility, compulsiveness, work tolerance and work readiness.
- 306. Business and Administration Problems for the Occupational Therapist** (1 q h cr) Peck
Prereq Open only to qualified students in the fields related to psychiatry and upon approval of the instructor
 A general study of the business and administrative aspects of an occupational therapy department, including budgeting, bookkeeping, and other matters pertaining to the handling of hospital funds. Also presented are principles of organizational plans, policies, reports, and records utilized in the hospital setting.
- 350. Psychiatric Concepts** (3 q h cr) Tunakan
Prereq Open only to qualified graduate students in an approved master's program and upon approval of instructor
 The historical development of concepts and attitudes of present-day psychiatric philosophy, treatment and diagnostic classifications is presented. The care and treatment of the psychiatric patient is correlated with dynamics of personality development and symptom formation.
- 351. Seminar in Psychiatric Nursing** (3 q h cr per q, total 9) Hook
Prereq Open only to qualified graduate students in nursing in an approved master's program
 Intensive study will be made of the role of the psychiatric nurse as a nursing team member and an interdisciplinary team participant in any hospital or other appropriate community organization. Psychological and sociological assessment will be made of the dynamics of human behavior in various kinds of interpersonal relationships with patients and co-workers.
- 352. Field Instruction in Psychiatric Nursing** (8-12 q h cr) Hook
Prereq Open only to qualified graduate students in nursing in an approved master's program
 Directed observations and participation in selected community services which demonstrate representative practices in psychiatric care. Opportunities are provided for the student to assess her abilities as a psychiatric nurse and to select an appropriate area in the intensive study of a field project.

- 353. Research Methods** (2 q h cr) Hook
Prereq Open only to qualified graduate students in an approved master's program
 Introduction to scientific methodology and thinking oriented specifically toward the needs of students in nursing and occupational therapy with regard to research and evaluative methods.
- 354. Interdisciplinary Communication in Psychiatry** (2 q h cr each II, III—total 4) Eaton
Prereq Graduate standing in fields related to psychiatry and upon approval of instructor
 Lecturers from the fields of psychiatry, clinical psychology, psychiatric social work, psychiatric nursing and other related fields will discuss their respective major contributions as related to formulation and application of psychiatric theory. Seminars relate to the current subject of discussion.
- 355. Basic Psychodynamics** (2 q h cr—total 4) Starr
Prereq Graduate standing in the fields related to psychiatry and upon approval of the instructor
 A review of personality development and the theory of interpersonal relationship from a psychoanalytic viewpoint. Inner psychological forces as well as external interpersonal forces are covered in order to understand normal and abnormal development of the personality. Patients are interviewed in order to demonstrate the theories of psychodynamics.
- 356. Problems in Psychiatric Nursing** (1-5 q h cr) Staff
Prereq Open only to graduate students in nursing in an approved master's program and upon approval of the instructor
 Individual investigation other than thesis or field study of some special problem elected or assigned.
- 357. Advanced Technics of Psychiatric Occupational Therapy** (1-3 q h cr) Peck
Prereq Open only to graduate students in occupational therapy in an approved master's program
 A study of technics and therapeutic trends in psychiatric treatment as related to development of new tools and technics of the occupational therapist in the psychiatric treatment program.
- 359. Seminar in Psychiatric Activity Therapy** (2 q h cr per q, max 8) Peck
Prereq Open only to graduate students in occupational therapy in an approved master's program
 An intensive study of the role of therapists in an interdisciplinary psychiatric setting. Psychological and sociological assessment of the dynamics of human behavior in various interpersonal relationships in which therapeutic activity is used as the *modus operandi*. Current theories of therapeutic activity are considered.
- 360. Field Instruction in Psychiatric Occupational Therapy** (4 q h cr, total 12) Peck
Prereq Psych 305 and 350; graduate standing and permission
 Directed observation and participation in the occupational therapy clinics or other psychiatric agencies and facilities which demonstrate representative practices in psychiatric treatment. Opportunities are provided for students to demonstrate their understanding and abilities as psychiatric occupational therapists in the selected areas of their choice.
- 361. Field Study** (0 cr) Staff
- 366. Introduction to Group Therapy** (2 q h cr per q, max 4; no credit unless second quarter is successfully completed) Eaton
Prereq Psychiatry 304 and graduate standing in an approved master's program for psychiatric occupational therapy or nursing, and permission. Other candidates for advanced degrees by permission
 Lectures on group therapy. Directed observation and participation as a co-leader in psychotherapy.
- Electives.—**
- 254. Statistical Methods** (2 q h cr) Innes
Prereq One semester of college mathematics or its high school equivalent
 Descriptive and inferential uses of statistics in the mental health field. Selected parametric and nonparametric techniques will be included.
- 301. Foundations of Human Behavior** (4 q h cr) Hook
Prereq Graduation from an approved school of nursing, including 6 sem hrs in psychology or educational psychology
 Study of fundamental biological and social drives as the motivating forces of human behavior; ways by which they are modified throughout a lifetime; and

some of the psychological theories which contribute to an understanding of the dynamics of human relationships.

- 302. Developmental Psychology** (2 q h cr per q—total 4; no credit unless second quarter is successfully completed)

Prereq 6 sem hrs in psychology or educational psychology, open only to qualified students in the fields related to psychiatry and upon approval of the instructor

A background of knowledge of normal development from birth to old age as a sound basis for understanding maladaptive behaviors. Consideration of cultural, emotional, social and intellectual factors throughout childhood; adolescent behavior and development; various aspects of adjustment in young adulthood, maturity and old age.

- 303. Emotional Development in Childhood** (2 q h cr per q—total 4; no credit unless second quarter is successfully completed) Starr

Prereq 6 sem hrs psychology or educational psychology. Open only to qualified students in the fields related to psychiatry and upon approval of the instructor

A psychiatric review of the theories of emotional, mental, social and intellectual development of children with emphasis on those psychological (particularly family) forces creating disturbances in development. Child patients and then families are clinically interviewed to demonstrate diagnostic and psychotherapeutic procedures.

- 304. Group Dynamics** (2 q h cr) Garetz

Prereq Open only to qualified students in the fields related to psychiatry and upon approval of the instructor

Introduction to group dynamics; emphasis upon settings in which work with groups is practiced; relationship of Group Dynamics to administration supervision and teaching.

Radiology

Professors Wilson, *Chairman*, Hunt, Moore, Pederson; Associate Professors James, Jones, Saichek, Waggener; Clinical Associate Professor Frazer; Assistant Professors Adkins, Bolamperti, Bunting, Dobry, G. Johnson, Mundt, Quaife; Clinical Assistant Professor Neely; Instructors Mohiuddin, Mulry, Novak, Robbins; Clinical Instructor Bradley; Assistant Instructor Dworak; Lecturer McMillan; Senior Consultant McAvin. *The curriculum in Radiology aims to relate the physical and biological principles of radiation effects to the basic sciences and to the diagnosis, prevention, and treatment of disease.*

The principles of radiology presented during the third quarter of the second year relate to radiation physics, radiobiology, principles of radiographic technics and the interpretation of roentgenograms.

During the third year radiologic interpretation is continued by lectures and diagnostic conferences, and the principles of radiotherapy are presented. Sectional teaching to groups of four to eight students is conducted through film reading sessions, group conferences, and tumor clinics.

Radiological Anatomy.—

Taught as part of Gross Anatomy

- 320. Principles of Radiology** (1 hr weekly, total 11 hrs III) Staff

- 330. Principles of Radiology** (total 15 hrs) Staff

- 331. Clinical Radiology** (total 15 hrs) Staff

Assignment of a group of four to eight students who, during five weeks, observe and participate in radiographic interpretation and ward rounds on radiotherapy service.

- 342. General Radiology Clerkship for Seniors** (5 wks, SS, I, II, III)

Assignments correlating specific clinical problems as radiologic diagnosis or therapeutic management. Attendance at seminars, conferences, and tumor clinics. University Hospital and affiliated hospitals.

- 343. Diagnostic Radiology Clerkship** (3 to 5 wks, SS, I, II, III)

Observation and case assignments in radiographic technic and interpretation of roentgenograms. Attendance at seminars and interdepartmental conferences. University Hospital and affiliated hospitals.

- 350. Advanced Diagnostic Radiology** (4 to 8 cr) Hunt, Moore, Pederson, Wilson

Prereq Radiol 320, 330, 331

Responsible analyses of the status of the various tissues, organs, regions, and systems of the body through correlation of radiographic and fluoroscopic observations with anatomy, physiology, and pathology.

- 352. Advanced Therapeutic Radiology** (4 to 8 cr) Hunt, Pederson, Waggener
Prereq Radiol 320, 330, 331
 Systematic consideration and responsible application of roentgen rays, radium and radioisotopes in the treatment of benign and malignant diseases involving the various organs and regions of the body.
- 353. Seminar** (1 cr per sem) Staff
- 354. Radiological Dosimetry** (3-8 cr) Jones, McMillan, Waggener
Prereq Radiol 320, and consent of department
 Analysis of factors controlling the intensity, quality, distribution, absorption, and effects of radiation in phantoms, barriers, and tissues.
- 355. Radiobiology** (3-8 cr) Hunt, Quaife
Prereq Anat 314, 315, Radiol 320, 354 (may be concurrent), and consent of department
 Assigned laboratory projects and reading for analysis of basic biological effects of radiation on cells, tissues, and organisms.
- 356. Nuclear Medicine and Biophysics** (3-8 cr) Hunt, Jones, Quaife, Schlichtemier
Prereq Physiol 310, 320, Radiol 320, and consent of department
 Laboratory assignment in nuclear technology and utilization of radioisotopes in basic medical science and in clinical procedures.
- 398. Master's Thesis** (9-15 q h cr)
- 399. Doctoral Thesis** (cr arr)

Surgery

Professors Musselman, *Chairman*, W. C. Davis, Finlayson, Hodgson, J. R. Jones, McLaughlin, Skultety, W. W. Webster; Associate Professors Barmore, Browne, Burk-lund, Brush, Coe, J.B. Davis, German, G. N. Johnson, Kennedy, McMurtry, D. M. Miller, Neis, Potter, Rasmussen, Sellers, Swenson, D. H. Thompson, C. E. Wilson; Research Associate Professor J. G. L. Williams; Assistant Professors Black, Brauer, Cuka, Fieber, Frank, Gillespie, J. T. Johnson, Karrer, Kimball, Latenser, Mota, Pester, Porter, H. Rath, Rees, Sasse, Schultz, Singer, Therien, L. W. Thompson; Clinical Assistant Professors Cherry, Davies, R. O. Garlinghouse, Gogela, Hilton; Associates L. L. Anderson, Cochran; Clinical Associate Cole; Instructors Berman, Brett, Bruce, J. G. Carter, Hanisch, Hamilton, Kutler, Melcher, Newland, O'Gara, G. L. Quast, J. W. Smith, L. D. Smith, R. L. Smith, Stroy, Walling, Watland, West-fall; Clinical Instructors Ehrlich, Hachiya, Hillyer, LeWorthy, Moessner, Wiedman; Assistant Instructors L. F. Davis, Dillow, Haskin, Henderson, Heydt, McManus, Olson, Panzer, Todd, Wickless; Clinical Assistant Brinkman; Senior Consultants Bisgard, Keegan, Morton, Reese; Emeriti Best, H. H. Davis, H. L. Davis, Shearer, Waters.

The formal courses in surgery are offered in the junior and senior years. How-ever, the faculty in surgery participates with other departments in a variety of interdepartmental exercises during the first two years. Correlation of the knowl-edge and precepts of non-clinical sciences with the problems displayed in patients who become the responsibility of surgeons is the major role of the Department in the first two years.

The primary clerkship in surgery is undertaken in the third year. During this period the manifestations and consequences of disease as encountered in patients are the focus. The principles of diagnosis, the implications and relation of basic sciences to disease and the application of surgical principles to the management of disease are stressed. Hospitalized patients and ambulatory patients contribute to this introduction to clinical surgery. Increased involvement with patients as part of the professional team is fostered by a series of electives for the third or fourth years. The electives are designed to build on the foundation of the third year clerkship for students favoring a career in general medicine or in any one of the related surgical fields. The technic for performing operations and the preparation for the practice of surgery require additional training and education after gradua-tion. The Department of Surgery includes sections of Anesthesia, General Surgery, Neurosurgery, Oral Surgery, Pediatric Surgery, Plastic Surgery, and Thoracic and Cardiovascular Surgery.

SURGERY.—

330. Fundamentals of Clinical Science

The Department of Surgery participates with other departments in this inter-departmental, coordinated course. This clinical science course is organized to provide a common background of clinical information in a number of system and subject areas. All clinical science departments contribute to this series.

CLERKSHIP FOR JUNIORS.—**334. Junior Hospital Clerkship**

This is the primary clerkship in surgery. Students examine, evaluate, and observe patients for whom they help care during the course of an illness. The clerkship is designed to develop skills and confidence in interviewing and examining patients. The application and evaluation of diagnostic procedures, the consideration of differential diagnosis, and the consequences of clinical decisions are emphasized in rounds conferences and seminars with instructors. The students participate in operations, learning operating room technics, observing the principles of operations, and correlating the operative findings with the clinical findings.

336. Junior-Senior Neuroscience Hospital Clerkship

This primary clerkship in neurology-neurosurgery is required during some four-week period of the junior or senior year.

ELECTIVES FOR JUNIORS AND SENIORS.—**342. Elective Outpatient Clerkship (Each 4 weeks, 4 or 8 weeks)**

The student participates in the care of ambulatory patients representing all areas of surgical care. Outpatient diagnostic and therapeutic procedures are included in the program which permits the student to observe the course of patients who are not hospitalized.

344. Elective Hospital Clerkships

Designed to build on the foundation achieved in the junior clerkships. The student is an active participant in the professional team caring for patients. Professional communication, relation of the surgical problem to the basis of disease, the details and technic of diagnosis and treatment are the focus of increasing involvement with patients. Students can expect to acquire confidence in identifying problems, organizing a plan of approach, and conducting patients through the pre- and post-operative periods in conjunction with the faculty.

A. Anesthesia Clerkship (Each 4 weeks)

Opportunity to gain understanding of preoperative evaluation and preparation of patients for anesthesia, clinical pharmacology of adjunctive drugs and anesthetic agents, respiratory physiology, principles of resuscitation, care of the unconscious patient, inhalation therapy, and approaches to control of pain.

B. General Surgery Clerkships (Each 4 weeks, 4 or 8 weeks)

Affiliated hospitals: Bishop Clarkson Memorial, Immanuel, Nebraska Methodist. In-hospital clerkship supervised by designated active members of the faculty.

C. Emergency Medical Services (Each 4 weeks)

Clerkship in emergency room activities where principles of emergency medical care are applied to acute problems of illness and injury.

D. Neurosurgery (Each 4 weeks)

Elective clerkship in neurosurgery supplementing the required neuroscience clerkship.

F. Thoracic and Cardiovascular Surgery (Each 4 weeks)**346. Special, Elective Experiences in Surgery**

Special interests or well developed career goals may lead a student to favor an irregular course or experience within or away from the medical center. In consultation with, and under the auspices of, a member of the faculty special arrangements can be made. Permission for this period will be contingent upon designing a supervised educational opportunity.

349. Research in Surgery

Length of approved time to be determined. In general, this type of experience favored for student who has identified a problem for which capacity and facilities exist to permit a fruitful period of study and effort.

A. Anesthesia

Opportunity to select an area of interest from aims of anesthesia clerkship for more intense study. Definition of problem and program of learning to be decided upon discussion with faculty in Anesthesiology. Limit by arrangement.

B. General Surgery

By arrangement with faculty.

F. Thoracic-Cardiovascular Surgery

By arrangement with faculty.

SURGERY, GENERAL EXERCISES.—**Introduction to Clinical Medicine** (Total 12 hrs, Period 3)

This course for sophomores is held weekly, jointly with the Department of Internal Medicine. A member of each department is present, and together they discuss such subjects as aging and involution, diseases of medical progress, shock, fever, reaction to injury, and stress.

Surgery Grand Rounds (Every Saturday 10:00-11:30 a.m.)

Physicians in practice are cordially invited to attend.

Surgery Seminar (Wednesday, 7:30 p.m., July through June, Room 3-112)

Presentation and discussion of subjects and articles related to surgery. Staff, residents, interns, and senior students.

GRADUATE COLLEGE COURSES.—**350. Advanced Surgery** (6 q h cr per q—max 24) Musselman, Staff

Prereq Permission

Clinical assignments, conferences, and demonstrations applying the principles of surgery to the diagnosis and treatment of disease. Emphasizes the relation of anatomy, biochemistry, pathology, physiology, and microbiology to surgical problems.

351. Operative Technic (4 q h cr) Musselman, Staff

Prereq Permission

Introduction to aseptic operative technique. Preparation of laboratory animals for physiological and technical studies.

361. Advanced Gross Anatomy (Anatomy 361) (3-10 q h cr) Holyoke, Pederson

Prereq Anat 310, 311, 312

Studies of general and special gross dissection of the human body.

368. Surgery Seminar (1 q h cr per q—max 9) Musselman, Staff

Prereq Permission

Seminar discussion of broad aspects of surgery. Forum for development and presentation of original work. Correlation with basic sciences, analysis of research, and discussion of interrelations between surgery and genetics, epidemiology, anthropology, economics, humanities, history, law.

369. Research Other Than Thesis (cr arr) Hodgson, Jones, Musselman, Sellers, Skultety, Staff**398. Master's Thesis** (9-15 q h cr)**399. Doctoral Thesis** (cr arr)

Urology

Professor Leroy W. Lee, *Chairman*; Associate Professors N. Davis, Kammandel, Malashock; Assistant Professors Bartone, Mardis; Clinical Assistant Professor Munger; Clinical Instructor Gilbert; Emeritus Owens.

The fundamental principles of this surgical specialty are taught in close coordination with the general surgical teaching program. The educational experience is geared to the type of knowledge which is of value to the general physician. Proficiency in a general knowledge of urology is accomplished by coordinated study, including lectures, clinical clerkship, dispensary and operative clinics. Emphasis at all times is on methods of diagnosis and management of the patient with urological disease.

Aside from the undergraduate teaching, the members of this department provide instruction to interns, surgical residents and nurses. They also provide specialized urological care to patients in the University Hospital and Douglas County Hospital. They conduct investigative research in various subjects of urological interest.

330. Fundamentals of Urology (1 hr weekly, total 12 hrs I)

Lectures on diseases of the urogenital system

Ward Clinics (2 hrs weekly when on Surgery Clerkship)

Students are given bedside ward clinics using patients at the University Hospital to illustrate major disease entities encountered in medical practice.

341. Dispensary (3 hrs weekly, total 15 hrs I, II, III, IV, V)

One clinic is held each week to which students are assigned for practical experience in the diagnosis and treatment of urogenital diseases.

Non-Departmental

320. Medical Practice and Religious Values Kepler, Staff

An introduction to the total care concept, emphasizing the importance of religion in medical practice for patient and physician. The tradition of the professional man. Clergy's role in total medical care. Pertinent features of the Jewish and Christian faiths and their attitudes in certain problem areas. Students will organize the presentation and discussion of several sessions dealing with the physician, the patient, and the patient-doctor relationship. Organized by a physician with religious training, the course will feature a number of distinguished visiting speakers. Attendance limited.

Senior Preceptorship Program

Each senior student is required to spend four weeks with an experienced practitioner of his choice. This period affords the student an opportunity to learn much of the art and science of medical practice in the rural community. The preceptors are selected by the Preceptorship Committee of the faculty of the College, and are leaders in general practice in Nebraska. They are regularly appointed members of the College of Medicine faculty, subject to the same regulations and responsibilities as all faculty members.

The student chooses a preceptor whom he closely follows in all medical activities including hospital work, office practice, and home calls. Students are allowed to participate in the various aspects of medical practice insofar as the preceptor feels they are capable of handling the work. Medical ethics and economics and the relationship of the physician to his community are made known to the student during his preceptorship.

BACCALAUREATE PROGRAM IN MEDICAL TECHNOLOGY

Department of Pathology

ARTHUR L. LARSEN, B.A., M.D.

Assistant Professor of Pathology and Director

ARDEN W. ENGSTROM, B.S., M.S., M.T. (ASCP)

Instructor in Pathology and Teaching Supervisor

The Training Course for Medical Technologists at the University of Nebraska College of Medicine is designed to teach qualified students the theory and technics of laboratory procedure. The increasing use of clinical laboratory determinations in the diagnosis and care of the patient has led to great opportunities for employment and advancement in the profession of medical technology. Positions are available to the medical technologist in hospital laboratories, in physicians' offices, in clinics, in research, in teaching and industry. The medical technologist is an integral part of the medical team that strives for more rapid, complete, and accurate diagnosis and treatment of the patient.

For proper understanding of clinical laboratory procedures, it is essential that an adequate background of scientific information be obtained before entering our program.

Organization.—The course for medical technologists has been established by the Board of Regents in connection with the Department of Pathology, College of Medicine. It has been accredited by the Council on Medical Education and Hospitals of the American Medical Association and the American Society of Clinical Pathologists as being qualified to provide adequate training in laboratory technic. Graduates of the Training Course for Medical Technologists are expected to take the examination for certification by the Registry of Medical Technologists, maintained jointly by the American Society of Clinical Pathologists and the American Society of Medical Technologists.

Facilities for Instruction.—The course is given in the University Hospital, and facilities of the University of Nebraska College of Medicine are available for instruction. In addition, the facilities of affiliated hospitals may be used for training in medical technology.

In 1968 the schools of Medical Technology at Bishop Clarkson Hospital and at Nebraska Methodist Hospital became affiliated with the Medical Technology program at the University of Nebraska College of Medicine. The purpose of this affiliation is to provide a strong combined academic program in medical technology and to provide for an increased enrollment of students in their fourth year from the University of Nebraska and the University of Nebraska at Omaha. Those students from each school who successfully complete the twelve-month course may be granted the degree of Bachelor of Science in Medical Technology from the University of Nebraska College of Medicine.

The University Hospital is organized primarily for teaching and is under the control of the Board of Regents, through the administration of the College of Medicine. It has a capacity of 280 beds, and patients are accepted from all over the state. All types of diseases are treated under the direction of the faculty of the College of Medicine. More than 5,000 patients are admitted each year and over 66,000 visits are made annually to the University Clinic on an outpatient basis. The total number of lab-

oratory tests performed on all patients exceeds 225,000. The laboratory work that is done includes all routine procedures and many specialized tests.

The library of the College of Medicine is maintained in the hospital. These books and periodicals are available for study and for awareness of current work in the field of laboratory medicine.

REQUIREMENTS FOR ADMISSION

High School.—Sixteen high school units are required for admission. They must include 3 units in English, 2 units in one foreign language (ancient or modern), 2 units in mathematics (1 each of algebra and geometry or an equivalent) and 1 in science (biology, botany, chemistry, physics, or zoology).

College or University.—To insure adequate background and training for entering a recognized course in medical technology, the following requirements have been established in accordance with the Registry of Medical Technologists:

BIOLOGIC SCIENCE.—Sixteen semester hours. This must include one full academic year (two semesters) of general biology and/or zoology, including lecture and laboratory. A minimum of 3 semester hours of bacteriology is required if offered at the college where preliminary work is taken. If bacteriology is not available, other branches of biologic science may be substituted with permission from the Director.

CHEMISTRY.—Sixteen semester hours including lecture and laboratory. This must include at least two semesters of general inorganic chemistry, lecture and laboratory, which may also include qualitative analysis. At least 4 semester hours of organic chemistry, including laboratory, must be completed. A course in quantitative analysis is highly recommended.

NOTE: For students taking their preliminary college work at the University of Nebraska in Lincoln various chemistry sequences not totaling 16 hours may also be accepted.

MATHEMATICS.—A minimum of 1 semester of college mathematics is required.

ENGLISH.—A minimum of 6 semester hours of English is required.

PHYSICS.—A lecture and laboratory course in physics is recommended.

ELECTIVES.—Sufficient hours to total 90 semester hours of college credit. Emphasis is placed upon obtaining as broad a general educational background as possible in addition to the required courses listed above.

To insure successful completion of the year of clinical training, the student should present a minimum grade average of 2.5 on the 4.0 system. Grades below D from institutions other than the University of Nebraska are not acceptable for transfer.

Since the student has entered the Training Course for Medical Technologists with specific course requirements completed and a minimum of 90 semester hours of college work, he is granted the degree of Bachelor of Science in Medical Technology when he has successfully completed the Training Course. The degree is granted by the University of Nebraska, College of Medicine. However, the student retains the option of receiving his degree from the institution at which he completed his preliminary work if he prefers.

Loan Funds and Scholarships.—Loan funds and limited scholarships are available. Three W. F. Kellogg full-tuition scholarships are awarded each year. The Freida M. Oltmann loan fund for Student Medical Technologists has funds for students beyond the second year at the University of Nebraska in Lincoln or in the training course in Omaha. This fund is administered by the Nebraska Society of Medical Technologists. Further information regarding loans and scholarships can be obtained from the Teaching Supervisor of the Training Course for Medical Technologists.

Starting Date.—Students begin training during the summer months. Groups are accepted in June, July, August.

Applications.—Forms for applications can be obtained from the Teaching Supervisor. Transcripts of both high school and college work, accompanied by a small recent photograph or snapshot must be submitted with the completed forms. An accompanying letter must list courses in progress.

Applicants must submit a transcript to the Registry of Medical Technologists, Muncie, Indiana, for evaluation of credits. A copy of the evaluation will be sent to the University of Nebraska by the Registry at the applicant's request. The fee for evaluation is \$1.00 which must be included with the transcript.

Enrollment in the Training Course is limited. Applications should be submitted at the end of the sophomore year. Absolute deadline for applications is February 15 of the student's junior year.

Fees and Expenses.—A tuition fee of \$150 a year for a resident student and \$280 a year for a nonresident student is charged at the time of enrollment. This fee covers tuition, registration, student health, and diploma fees. Allowance should be made for the purchase of books. Other than for uniform laundry, students are responsible for their own maintenance. Limited dormitory facilities are available on the campus. Adequate housing can be found near the campus.

PLAN OF INSTRUCTION

The course of training is 12 months in length. Lectures are designed especially for the needs of medical technologists. Conferences are held at frequent intervals for consideration of technics, their relation to disease processes, and possible sources of error. Oral and written examinations are given at intervals. Demonstrations are used to introduce new subject matter, to emphasize important points, and to familiarize the student with unusual problems.

Courses and credit hours are arranged as follows:

LECTURES:

MEDICAL MICROBIOLOGY.—This course is a comprehensive study of the medical aspects of bacteriology, mycology, parasitology and immunology 4 credits

CLINICAL BIOCHEMISTRY.—This course is designed to relate chemical laboratory procedures to the normal and abnormal chemical reactions of the human body 4 credits

INTEGRATED HEMATOLOGY.—This course covers the general principles of blood examination for alterations in the cellular elements, including a discussion of the abnormal conditions which are indicated by laboratory results. Procedures designed to aid in the diagnosis of

coagulation disorders are discussed. The theory of blood groups and transfusion as a sub-section on immunohematology is included	3 credits
CLINICAL MICROSCOPY.—General aspects of analysis of urine, gastric contents and other body fluids are discussed	1 credit
INSTRUMENTATION.—Theoretical principles and practical operation of laboratory instruments are presented. Specific instruments are used to demonstrate principles of spectrophotometry, electrophoresis, chromatography, and microscopy	2 credits
PROFESSIONAL TOPICS.—An introduction to laboratory organization and management is presented, including principles of supervision and education	1 credit
INTRODUCTION TO CLINICAL LABORATORY SPECIALTIES.—Basic concepts of radioisotopes, histologic technic, cytology, virology, and quality control are discussed	1 credit
SEMINARS IN MEDICAL SCIENCE.—Principles of scientific investigation, including biostatistics, are presented, and students apply these principles to case reviews, journal reports, and individual scientific projects	2 credits

CLINICAL SERVICES:

In addition to the formal lecture material, the student is assigned to various services for practical laboratory experience. There are seventeen (17) service periods during the twelve month training program, and the division of time is indicated below:

CHEMISTRY.—This service includes examination of blood and other body materials for chemical constituents. Such tests are usually quantitative. The student learns the proper use of equipment and develops careful technics	5 credits (15 weeks)
HEMATOLOGY.—Various tests for enumeration and detection of abnormality of the formed elements of the blood and tests for alteration of the coagulation mechanism of the blood are performed in this department	4 credits (12 weeks)
BACTERIOLOGY, MYCOLOGY AND PARASITOLOGY.—The identification of micro-organisms, particularly pathogenic, by morphologic and cultural characteristics is undertaken in bacteriology. Parasitology includes the study of technics for isolation and identification of small animal forms capable of causing disease in man. Adequate demonstration material is maintained in the laboratory. This section of training is under the direction and supervision of the Department of Microbiology of the College of Medicine	3 credits (9 weeks)
SEROLOGY.—This course involves the measurement of immunologic processes by laboratory tests	1 credit (3 weeks)
BLOOD BANK TECHNIC.—Procedures for the handling and storage of blood, as well as preparation of blood for transfusion, are taught during this service. Methods for detection of incompatibility between bloods are emphasized	2 credits (6 weeks)
HISTOLOGIC TECHNIC.—The student learns methods of preparing tissues for microscopic examination, including fixation, sectioning, and staining	1 credit (3 weeks)

URINALYSIS AND MISCELLANEOUS.—The student performs routine examinations of urine, gastric contents, and other body fluids. In addition, the performance of basal metabolic rate determinations is accomplished1 credit

ADDITIONAL COURSES AVAILABLE:

The Department of Pathology also offers a separate course in histologic technic. For further information on this program, contact C. A. McWhorter, M.D., Chairman, Department of Pathology.

MASTER OF SCIENCE IN PATHOLOGY FOR MEDICAL TECHNOLOGISTS

The graduate program in pathology for medical technologists is designed to provide advanced theoretical and practical education to the individual whose aim is to qualify for supervisory or teaching positions, although the student is also required to design and complete an original research project.

PREREQUISITES: Graduate students admitted to the department may include medical technologists registered by the American Society of Clinical Pathologists who hold a Bachelor of Science degree from an accredited institution and whose qualifications are acceptable to the Pathology Department and the Graduate College. Preference will be given to applicants who have had some working experience.

Organization.—The master's degree program in pathology for medical technologists may be completed only under option one as published in the Graduate College catalog. Forty-five quarter hours must be completed with 30 to 36 of these hours constituting course work and the remaining 9 to 15 hours consisting of research and thesis.

The general courses to be completed by all candidates are:

1. Quality Control and Instrumentation—3 quarter hours.
2. Laboratory Supervision and Administration—2 quarter hours.
3. Educational Administration in Medical Technology—2 quarter hours.
4. Seminar—3 quarter hours.

At least one-half of course work, including thesis, must be in the Department of Pathology. Supporting courses may be drawn from the Departments of Microbiology and Biochemistry.

321. GENERAL PATHOLOGY.—(3 quarter hours per quarter)

This course emphasizes the etiology and morphologic alterations produced by disease processes. It comprises the general principles of the reaction of the body to injury and of specific disease processes in detail by organ systems in both lecture and laboratory exercise.

331. CLINICAL PATHOLOGY.—(3 quarters)

Special emphasis is placed upon the selection of tests and the interpretation of the results of such tests, correlating these results with the clinical findings.

350. SUPERVISION AND ADMINISTRATION.—(2 quarter hours)

Principles and application of personnel relations, laboratory organization, laboratory budgets, ordering and purchasing of equipment, record keeping, employee interviews, hospital-laboratory relationships.

351. EDUCATIONAL ADMINISTRATION IN MEDICAL TECHNOLOGY.—(2 quarter hours)

An introduction to the duties of the teaching supervisor. Techniques of lecture presentation, use of audio-visual aids, grading, and examinations will be discussed. Selection and admission of students, counseling of students, preparations of students' lecture and laboratory assignments will be reviewed.

352. **QUALITY CONTROL AND INSTRUMENTATION.**—(3 quarter hours)
This course is designed to present the principles of operation, calibration, and maintenance of laboratory instruments. Principles of statistics as applied to laboratory control will be presented as well as technics for insuring the accuracy and reproducibility of laboratory results.
353. **COAGULATION AND BLOOD COMPONENTS.**—(2 quarter hours)
This course will discuss the theory of blood coagulation, the clinical tests used to diagnose coagulation disorders and to follow therapy in patients with coagulation diseases. Also, the preparation of various blood fractions to be used therapeutically will be presented.
354. **BLOOD BANK ADMINISTRATION.**—(2 quarter hours)
This course is intended to acquaint the technologist with the responsibility of record keeping, blood replacement, and personal liability.
361. **ULTRASTRUCTURAL METHODS IN PATHOLOGY.**—(4-8 quarter hours)
Technics of preparation of human biopsy specimens, experimental tissues, and virus material for electron microscopy. Theoretical and practical instruction in the operation of the electron microscope.
362. **ULTRASTRUCTURE OF CELLS AND TISSUES.**—(3 quarter hours)
Modern concepts of cellular ultrastructure, and correlation of structure with function of cells and tissues.
363. **ULTRASTRUCTURAL PATHOLOGY.**—(3 quarter hours)
Ultrastructural aspects of diseased cells from patient and research tissues.
364. **SPECIAL PROBLEMS IN ELECTRON MICROSCOPY.**—(credit arranged)
365. **ADVANCED HEMATOLOGY.**—(1-4 quarter hours)
Lecture and laboratory course designed to review normal hematology and to introduce the student to new concepts. Abnormal morphology, blood disease and treatment covered in detail.

Graduate Fees.—Please refer to page 33.

A resident student who registers for less than 12 quarter hours will be charged \$12.00 for each quarter hour registered.

Fellowships and Financial Aid.—Full time graduate students may qualify for fellowships. For information, write to the Graduate College, University of Nebraska, Lincoln, Nebraska 68508. All applications for financial assistance must be received before March 1st of the year preceding that for which assistance is desired.

Full-time University employees may register for 6 hours of course work each quarter without charge.

A limited number of Allied Health Professions Traineeship Grants covering tuition, books, laboratory fees, and travel allowance, plus a stipend, are available. Please contact the Department of Pathology for further details.

Application Procedure.—Application forms and a Graduate College Bulletin may be secured from the Graduate College, University of Nebraska, Lincoln, Nebraska. Transcripts of all college work should be submitted to the Graduate College along with the completed application. Applications will be reviewed by the Graduate College and by the Department of Pathology. Notification of acceptance is issued by the Graduate College.

TRAINING COURSE FOR CYTOTECHNOLOGISTS

Department of Pathology

C. A. McWHORTER, M.D.

Professor of Pathology, Chairman of Department, and Director

M. SIMONS, M.D.

Associate Professor of Pathology, Associate Director

J. W. SCOTT, M.D.

Assistant Professor of Pathology, Associate Director

The training course for cytotechnologists at the University of Nebraska College of Medicine is designed to teach qualified students the theory and methods of examination of cytologic material obtained from various areas of the body. Cytotechnology is the microscopic examination of cellular material with special emphasis being placed on the identification of malignant and pre-malignant cellular changes. The primary source of material has been the uterine cervix; however, increasing amounts of material are obtained from the respiratory tract, gastrointestinal tract, body fluids, etc., for cytologic examination. The training course in cytotechnology is a one-year program. Upon satisfactory completion of the twelve-month program, the student is qualified for and expected to take the registry examination which is given by the Board of Registry of the American Society of Medical Technologists and the American Society of Clinical Pathologists. Upon certification by the Board of Registry, the student is qualified to work under the supervision of a pathologist in the processing and screening of cytologic material. Upon completion of the training period, a certificate is issued by the University of Nebraska indicating the satisfactory completion of 12 semester hours.

Requirements for Admission.—A minimum of 60 semester hours of college or university level work is required prior to admission. The 60 semester hours must include at least 12 hours in the field of biological sciences. Courses of this type should be both lecture and laboratory and should include courses such as general zoology, microbiology, embryology, histology, and genetics. The remaining 48 semester hours should be designed to provide a broad general educational background. A minimum grade average of C is required. Grades below C are not acceptable for transfer.

Fees and Expenses.—The tuition fee for residents of Nebraska for each six-month training period is \$60.00. The fee for nonresidents is \$120.00.

Scholarships.—Through a grant provided by the United States Public Health Service, Division of Chronic Disease Control, a scholarship student stipend is available.

Applications.—Application forms may be obtained on written request to the Director.

Starting Date.—The program is offered yearly beginning June 1.

TRAINING COURSES FOR RADIOLOGIC TECHNOLOGISTS

WILLIAM J. WILSON, M.D.

Foundation Professor and Chairman, Department of Radiology

HOWARD B. HUNT, M.A., M.D.

*Director, Eppley Radiation Center
Professor of Radiology*

RICHARD A. BOLAMPERTI, B.S., M.D.

Assistant Professor of Radiology

CHARLES A. DOBRY, M.D.

Assistant Professor of Radiology

MERTON A. QUAIFFE, M.D., M.S.

Director, Nuclear Medicine

ERNEST O. JONES, Ph.D.

Associate Professor of Biophysics

JOHN G. McMILLAN, B.S., M.A.

Consultant in Radiation Physics

MICHAELA ANN WASINGER, R.T.

Chief Technologist

CARL DWORAK, B.S., R.T.

Radioisotope Technologist

JOHANNA M. MORRELL, R.N., R.T.

Radiotherapy Nurse

Organization.—Two programs for training of radiologic technologists have been established by the Board of Regents in connection with the Department of Radiology, College of Medicine. The certification program, open to qualified men and women graduates of high school, prepares the candidate as a general radiologic technologist, and by special courses as a radioisotopic technologist or radiotherapy technologist. The B.S. in radiologic technology program, open to qualified students, provides additional didactic training and requires further competence in radioisotopic or other special technology. Each program of in-hospital training extends over a two year period. The courses have been approved by the Council on Medical Education and by the American Registry of Radiologic Technologists. Graduates of both programs are eligible for examination by the American Registry of Radiologic Technologists, which grants eligibility to the title of Registered Technologist upon successful completion of the examination.

Facilities for Instruction.—Basic science instruction is provided by the Departments of Anatomy, Physiology, and Radiology at the College of Medicine. Instruction and experience in radiologic technology are provided in the Department of Radiology of the University of Nebraska Hospital. Facilities are provided for experience in all usual and most special radiographic procedures through supervision by the radiologists and the senior radiologic technologists. Facilities are provided for experience in radiotherapy and radioisotopic procedures. All students and staff members are routinely monitored and carefully protected against ex-

posure to radiation. The libraries of the College of Medicine and of the Department of Radiology are available for reference. Students are eligible to attend seminars, conferences, and convocations held on the College of Medicine campus.

Requirements for Admission.—An applicant for admission to the course in radiologic technology must be in good health with no disability and be a graduate of an accredited high school. Preference is shown to those applicants with a balanced program including English, chemistry, physics, biology, typing, and secretarial work, although applicants will be considered who do not present credits in all such subjects. One year of collegiate study including English, physics, zoology, chemistry, typing, and secretarial work is recommended.

Candidates for the B.S. program are required to have completed 60 semester hours of college courses including 8 hours of chemistry, 8 hours of physics, an additional 4 hours in physics or chemistry, 6 hours of English, and 8 hours of biology. Collegiate courses in psychology, business administration, and education are recommended since the degree graduates are in demand as teachers of radiologic technology in medical schools and as supervisors in hospitals.

The completed application should be accompanied by a transcript of all high school and college credits, a photograph, and the names and addresses of two people from whom references can be obtained. Admission is allowed in June. Applications should be sent to the Chairman of the Department of Radiology, University of Nebraska College of Medicine, 42nd & Dewey Avenue, Omaha, Nebraska 68105. Application forms will be provided on request.

Fees and Expenses.—The tuition fee is \$150 for a resident of the State of Nebraska and \$280 for a nonresident. A \$25 deposit is required at the time of acceptance, returnable to the applicant only under extenuating circumstances. Tuition fee covers registration, student health, and diploma fees as well as tuition. Students maintain themselves and provide their own uniforms. Cost of text books is about \$30. Board is available in the vicinity of the hospital. In the second year no tuition is charged and a stipend is available for the six students with superior scholastic records. Loan funds are available to students in training as technologists through the generosity of the W. K. Kellogg Foundation. Information concerning loans can be secured from the Director.

General Information.—All students are accepted on a probationary basis during the first three months of training. Students are in class or on duty in the Department of Radiology a total of 40 hours per week. Night call is taken on rotation during the second year. A vacation of two weeks is allowed either during the summer or at other arranged times. A general physical examination and immunization against diphtheria, typhoid fever, and small pox are provided by the Student Health Service.

Curriculum.—The course of training for students in radiologic technology consists of lectures, demonstrations, and supervised experience. When not in class the student works with the staff technologists in the conduct of various types of radiologic procedures. Gradually increasing responsibilities are assigned to students as their competence increases. During the two years in training the student participates personally in all activities by scheduled rotation through all divisions in the Department of Radiology.

The following courses are required of candidates for the B.S. in Radiologic Technology:

	Hours		Hours
College credits	60	Medical and Surgical	
Anatomy	3	Diseases	2
Physiology	3	Radiographic Technology	30
Principles of Radiology	2	Radiotherapeutic Technology	5
Office Procedures	1	Radioisotopic Technology	5
Physics	6	Elective	8
Principles of Nursing	1		
Medical Nomenclature	1	Total	127

Courses required of candidates for certificates in radiologic technology and in radioisotopic technology are indicated below. Qualified special students enrolled in radioisotopic technology at the Omaha Veterans Hospital receive university credit for specified courses but no certificate is granted to such special students by the University of Nebraska College of Medicine. Credits are expressed in semester hours.

(1) **ANATOMY.**—Lectures, class recitations, demonstrations, and laboratory work dealing with the structure of the human body. Preserved specimens and fresh animal specimens are used for study. 3 cr. hrs.

(2) **PHYSIOLOGY.**—Lectures, demonstrations, and laboratory dealing with the functions of the human body. Required of B.S. candidates. 3 cr. hrs.

(3) **PRINCIPLES OF RADIOLOGY.**—The general principles of radiation, technic, contrast media, and various diagnostic procedures are presented together with the basic principles of X-ray and radium therapy. Lectures include professional ethics. 2 cr. hr.

(4) **OFFICE PRACTICE.**—Supervised experience covering filing, cross indexing of diagnoses according to the Standard Nomenclature of Disease, vocabulary training, and transcription of radiological reports. 1 cr. hr.

(5) a. **BASIC RADIATION PHYSICS.**—Production, characteristics, and control of radiation as applicable to radiographic technic and radiotherapy. 4 cr. hrs.

b. **RADIOISOTOPIC PHYSICS.**—Theory of atomic and nuclear structure, concepts of matter, natural and artificial radioactivity. (Required of candidates for certification in radioisotope technology and for B.S. in radiologic technology.) 1 cr. hr.

c. **HEALTH PHYSICS.**—Lectures, laboratory, and supervised training in monitoring and personnel safety measures, application of federal and other regulations, and radioisotope accountability. (Required of candidates for certification in radioisotope technology and for B.S. in radiologic technology.) 1 cr. hr.

(6) a. **ELEMENTARY RADIOGRAPHIC TECHNOLOGY.**—Demonstration of anatomical positioning and adaptation of radiographic exposure to the more common radiographic examinations. 10 cr. hrs.

b. **INTERMEDIATE RADIOGRAPHIC TECHNOLOGY.**—Supervised application of above principles by the student in the conduct of routine radiographic procedures. 20 cr. hrs.

c. **SPECIAL PROCEDURE TECHNOLOGY.**—Supervised technical participation in neuroradiology, angiocardiology, selective angiography, and planigraphy. 10 cr. hrs.

(7) a. **RADIOTHERAPEUTIC TECHNOLOGY.**—Demonstration of types of diseases to which radiotherapy is applicable and of their treatment by X-ray, telecobalt, radium, and other radioactive agents. 3 cr. hrs.

b. **ADVANCED RADIOTHERAPEUTIC TECHNOLOGY.**—Extended experience in radiotherapeutic technology, seminars in clinical radiation dosimetry and radiobiology, participation in tumor follow-up and registry. (Open to graduate technologists and graduate nurses who on completion qualify for national examination and certification as Radiotherapeutic Technologist.) 5 to 30 cr. hrs.

(8) a. **BASIC RADIOISOTOPIC TECHNOLOGY.**—Supervised experience in instrumentation and laboratory procedures. 5 cr. hrs.

b. **INTERMEDIATE RADIOISOTOPIC TECHNOLOGY.**—Lectures and supervised experience in special laboratory determinations. (Required of all candidates for certification in radioisotope technology and for B.S. in radiologic technology.) 5 to 10 cr. hrs.

c. **ADVANCED RADIOISOTOPIC TECHNOLOGY.**—Theory and application of advanced radioisotopic technics in hospital and research laboratory procedures. (Required only of candidates for certification in radioisotope technology and B.S. in radiologic technology.) 20 cr. hrs.

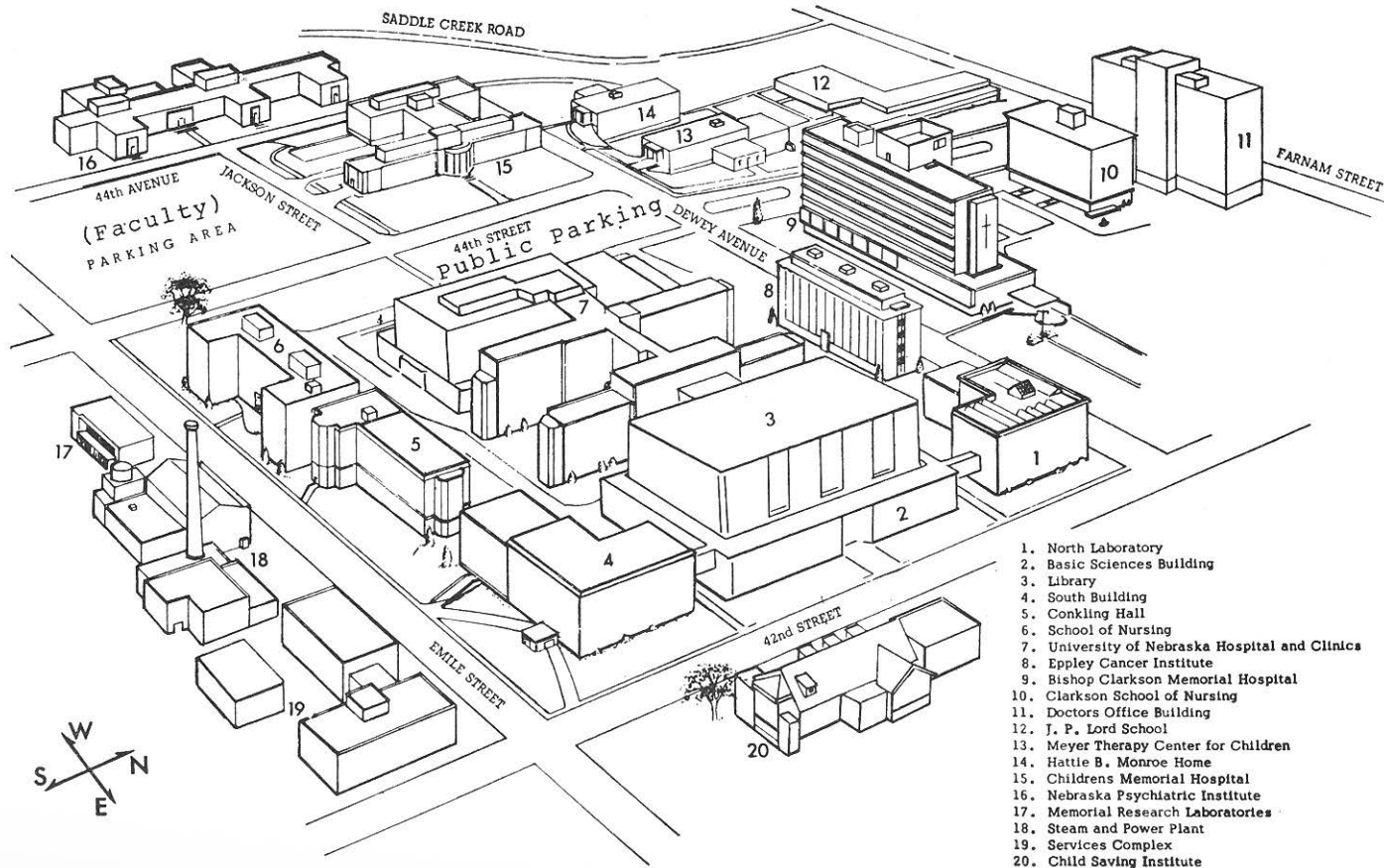
d. **NEUTRON ACTIVATION ANALYSIS.**—Lectures and supervised laboratories utilizing the Triga nuclear reactor, radiochemistry laboratory, and multichannel analyzer for microanalysis of trace elements at the Omaha Veterans Hospital. (Elective by candidates for B.S. degree or for certification in radioisotopic technology.) 2 cr. hrs.

Opportunities.—There is an increasing demand for qualified technologists primarily in the departments of radiology in hospitals and in the offices of doctors specializing in radiology. Radioisotopic technologists find opportunities both in clinical laboratories and in research laboratories. There is no opportunity for independent operation of a radiologic laboratory by the technologist since the use of radiation in the diagnosis and treatment of disease is legally the practice of medicine and in the interest of public welfare must be carried out under the supervision of a licensed physician.

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COLLEGE OF MEDICINE CAMPUS—OMAHA



**COLLEGES, SCHOOLS AND DIVISIONS
OF
THE UNIVERSITY OF NEBRASKA**

College of Agriculture and Home Economics

Leading to the degree of Bachelor of Science in Agriculture and Bachelor of Science in Home Economics.

In addition to the resident teaching division, the College of Agriculture and Home Economics is comprised of the Agricultural Experiment Station with headquarters on the Lincoln campus and at outlying stations at North Platte, Scottsbluff, Mead, Clay Center, and Concord; the Agricultural Extension Service with headquarters in Lincoln, and county or district extension offices at 82 locations in the state; and the University of Nebraska School of Technical Agriculture at Curtis.

School of Home Economics

Leading to the degree of Bachelor of Science in Home Economics.

College of Arts and Sciences

Leading to the degrees of Bachelor of Arts, Bachelor of Fine Arts, Bachelor of Music, Bachelor of Science.

School of Journalism

Leading to the degrees of Bachelor of Arts, Bachelor of Science in Agriculture, Bachelor of Science in Business Administration, Bachelor of Arts in Education—in the appropriate colleges—and to a Professional Certificate in Journalism.

School of Music

Leading to the degrees of Bachelor of Music and Bachelor of Music in Education—in the appropriate colleges.

College of Business Administration

Leading to the degree of Bachelor of Science in Business Administration.

College of Dentistry

Leading to the degrees of Doctor of Dental Surgery and Bachelor of Science in Dental Hygiene.

College of Engineering and Architecture

Leading to the degrees of Bachelor of Science in Agricultural Engineering, Bachelor of Science in Chemical Engineering, Bachelor of Science in Civil Engineering, Bachelor of Science in Computer Science, Bachelor of Science in Electrical Engineering, Bachelor of Science in Mechanical Engineering.

Supervises Nebraska Engineering Research Center, Lincoln.

School of Architecture

Leading to the degrees of Bachelor of Architecture, Bachelor of Science in Construction Science.

Graduate College

Leading to the degrees of Doctor of Philosophy, Doctor of Education, Master of Arts, Master of Science, Master of Architecture, Master of Fine Arts, Master of Business Administration, Master of Education, Master of Music, Master of Physical Education, Master in Psychiatric Nursing, Master in Psychiatric Occupational Therapy, Master of Secondary Teaching, and Master of Social Work.

Graduate School of Social Work

Leading to the degree of Master of Social Work.

College of Law

Leading to the degree of Juris Doctor.

College of Medicine

Leading to the degrees of Doctor of Medicine, Bachelor of Science in Medicine, Bachelor of Science in Medical Technology, Bachelor of Science in Radiological Technology, certificate in Medical Technology, and certificate in Radiologic Technic.

School of Nursing

Leading to the degree of Bachelor of Science in Nursing.

College of Pharmacy

Leading to the degree of Bachelor of Science in Pharmacy.

Teachers College

Leading to the degrees of Bachelor of Science in Education, Bachelor of Arts in Education, Bachelor of Fine Arts in Education, Bachelor of Music in Education.

University Extension Division

Summer Sessions

*Separate bulletins or information concerning any college, school, or division can be obtained free of charge by addressing the
Admissions Office, University of Nebraska,
Lincoln, Nebraska 68508*

